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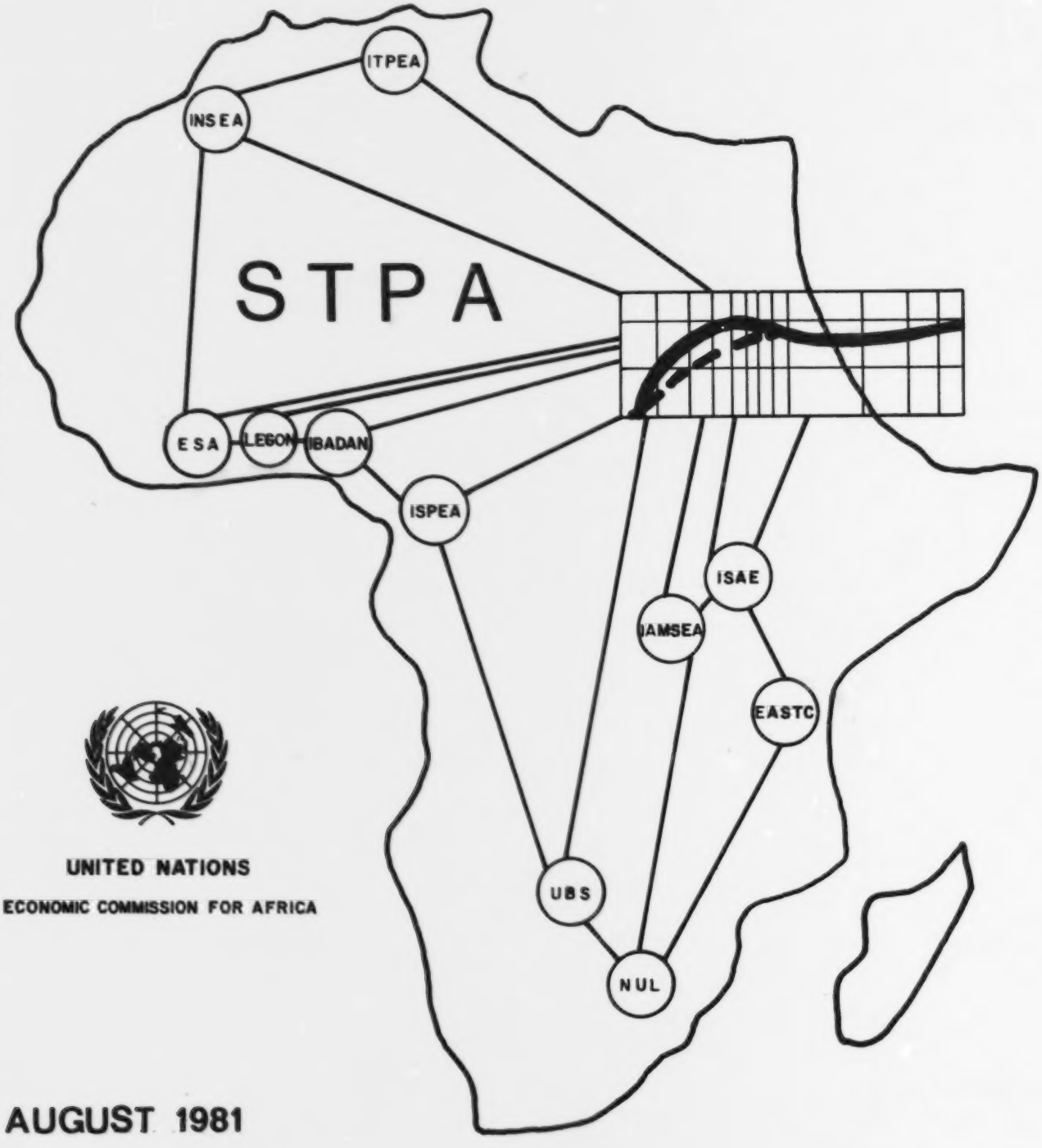
# Directory of Statistical Training Centres Participating in the Statistical Training Programme for Africa

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Second Meeting of Directors of Centres Participating in the Statistical Training Programme for Africa (STPA)

Addis Ababa, 2-6 November 1981

# DIRECTORY OF STATISTICAL TRAINING CENTRES PARTICIPATING IN THE STATISTICAL TRAINING PROGRAMME FOR AFRICA (STPA)

C O N T E N T S

English version


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# DIRECTORY OF STATISTICAL TRAINING CENTRES PARTICIPATING IN STPA

## INTRODUCTION

One of the main objectives of the Statistical Training Programme for Africa (STPA) is to establish a basis for existing training institutions to operate in a co-ordinated manner with a view to improving their efficiency so as to participate effectively in development efforts.

To meet this objective, how can one ensure the convergence of efforts and draw lessons from results without having first (with the interests of all concerned in mind) identified the Statistics Training Centres which are likely to enter into jointly-planned activities, and without being able to refer at anytime to an up-dated list of them?

Furthermore a number of countries are not aware of statistical training being conducted in some other countries. Where they are aware of such facilities, they are ignorant of the course content, admission requirements, etc... therefore foreign students cannot utilize these facilities because of lack of adequate information.

The co-ordination of statistical training activities for the region could include regular and timely dissemination of information listing all facilities available.

The aim of the directory is in line with the above considerations.

The directory is built as far as possible on existing information and data which are available to the Statistics Division of ECA. This information had been up-dated through correspondence with the training centres themselves.

It is worth mentioning that the Public Administration, Management and Manpower Division of ECA published quarterly a Training Information Notice (TIN) on current training opportunities both within and outside the region, available to Africans. Without changing the aims to be achieved, the Statistics Division at present, deals particularly with statistical training centres comprising the Statistical Training Programme for Africa (STPA).

| | | | |
|---|---|---|---|
| 1. | Country | : | Uganda |
| 2. | Name of the Centre | : | Institute of Statistics and Applied Economics (ISAE) |
| 3. | Attached to | : | Makerere University |
| 4. | Address | : | P.O. Box 7062, Kampala, Uganda<br>Telephone: 42 471, 56 661-5<br>Telegram : Makunika, Kampala |
| 5. | Director | : | Sam Tulya-Muhika |

6. Object

The main purpose is to provide high level professional training to nationals of the English speaking African countries. With this object in view a practical oriented undergraduate programme for the award of a B.Sc. degree in Statistics and Economics from Makerere University was developed since 1969. However from experience, it was realized that a new programme need be developed in order that the training offered at the Institute would meet the most immediate needs of the countries of the region. With this purpose in view, a highly professional oriented programme leading to the award of the Bachelor of Statistics Degree from Makerere University has been introduced since July 1975.

The professional B.Sc. Programme introduced in July 1969 was being phased out till March 1977 and a new B.Sc. programme with a theoretic bias was introduced in July 1975. In collaboration with the departments of Economics and Mathematics the Institute made available programme leading to B.Sc. degree in Economics and Statistics and Mathematics and Statistics respectively.

As part of the training activities in the Institute, it is carrying out programmes for postgraduate studies. With this in mind, the Institute organizes a professional postgraduate nine month programme leading to a Diploma in Statistics (Dip. Stat.) for re-training and training civil servants in the region. Under this programme successful candidates may opt to write a thesis after the Diploma course, and be eligible for the degree of Masters of Statistics (M.Stat.) of Makerere University. Candidates will be able to specialize in any of the following areas: Economic Statistics, Social Statistics, National Accounts, Agricultural Statistics, Demography and Social Statistics Sampling Technology, and Data processing.

7. Historical background

The Institute of Statistics and Applied Economics was established at Makerere University in July 1969 in accordance with the recommendations of a United Nations Experts Group on the education and training of statisticians in Africa.

The Institute is established as "an autonomous institute within the legal framework of Makerere University".

The membership of the Advisory Council of the Institute includes:

- Permanent Secretary, Ministry of Finance, Planning and Economic Development, Government of Uganda (Chairman),
- Vice Chancellor Makerere University,
- Permanent Secretary, Ministry of Education, Government of Uganda,
- Dean of the Faculty of Science Makerere University, Kampala,
- Dean of the Faculty of Social Sciences, Makerere University, Kampala
- Chief, Government Statistician Government of Uganda,
- Director of the Institute (Secretary),
- Representative of the Government of Kenya,
- Representative of the Government of Tanzania,
- Director, Eastern Africa Statistical Training Centre.

8. Teaching staff

Training staff of the Institute is two-grouped. The Government of Uganda provides a Director and various (counterpart) professional staff. The United Nations provides Project Manager and four experts in various fields plus consultants.

9. Teaching programmes

A. Undergraduate professional (B. stat.) Programme

1. Duration - three years

2. Eligibility for admission

(i) To be considered for admission to the programme, the applicants should be officially nominated by his Government or organization to follow this programme,

(ii) To qualify for admission to the programme, the candidate must qualify to enter the University either as an A-level candidate and, as a minimum requirement, have obtained a Principal pass in Mathematics or must have obtained a good pass at Intermediate professional training level in Statistics or a good pass of Part II of the Institute of Statisticians or equivalent.

3. Number of places offered in 1978 : 45

4. Regulations

(i) Candidates shall be required to sit and pass examination paper in each year of study as follows:

- First year : six papers and one practical examination
- Second year : six papers and one practical examination
- Third year : six papers and one practical examination

The pass mark shall be at least 40 for all examination papers.

(ii) Progressive assessment shall contribute 33 1/3 to over-all assessment in each of the second and third years of study. This shall be made up of all assessment other than examination papers. For the first year, progressive assessment shall contribute up to 33 1/3 (and not less than 25) in each paper.

5. Teaching programme

The summary outline of the programme to be taken will be as follows:

First year (11 months duration)

| | | |
|---|---|---|
| Statistics | : | two papers |
| Economics | : | two papers |
| Mathematics | : | two papers |
| Practical Exam. | : | one four-hour paper |
| French | : | Optional course (two hours) |
| Workshop | : | Nine weeks during University long vacation |

Second year (11 months duration)

| | | |
|---|---|---|
| Statistics | : | three papers (3 hours for each examination paper) |
| Commerce | : | one paper (3 hours for the paper) |
| Economics | : | one paper (3 hours for the paper) |
| Mathematics | : | one paper (3 hours for the paper) |
| Practical examination | : | one four-hour paper |
| Workshop (nine weeks during University long vacation) | | |

Third year (nine months duration)

| | | |
|---|---|---|
| Statistics | : | five papers (24 hours for each Statistics paper) |
| Economics | : | one paper (3 hours for the paper) |
| Practical examination | | one four-hour paper |

6. Awards

(i) To be admitted to the final year written examination a candidate shall present a written acceptable report of a piece of research he designed and carried out.

(ii) The degree of B. Stat. shall be conferred upon a candidate who successfully completes the whole programme. The following classification of the degree shall prevail:

- Over 70 per cent : First Class Honours
- 60 to 69 per cent : Upper Second Class Honours
- 50 to 59 per cent : Lower Second Class Honours
- 40 to 49 per cent : Pass
- Below 40 per cent : Fail

B. Undergraduate B.Sc. Programme

Duration: three years

1. Admission: To be registered as a candidate for the degree of Bachelor of Science the individual must satisfy the entrance requirements of the University, the special requirements of the Faculty, and of the courses which he wishes to follow.

2. Qualifications: To qualify for the award of the degree of Bachelor of Science, the candidate is required to be registered for the degree for a minimum of three academic years, to follow courses as specified below, and to sit for and pass the prescribed examinations.

3. Syllabuses

| | Outline | |
|---|---|---|
| - First year | Statistics | two three-hour papers |
| | Economics | two three-hour papers |
| | Mathematics | two three-hour papers |
| - Second year | Statistics | three three-hour papers |
| | Economics | two three-hour papers |
| - Third year | Statistics | two three-hour papers |
| | Economics | two three-hour papers |

C. Diploma in Statistics (Dip. Stat.) and Master of Statistics (M.Stat.)

The nine-months-long Dip. Stat. programme is a demanding undertaking designed for highly motivated, mature persons who want to make their leave of absence from their position in their home country as productive as possible. The training is through class-room lectures, seminars,

discussions, extensive laboratory work emphasising practical aspects to a greater depth. The structure of this programme is such that it provides for compulsory or core courses and optional courses relating to the area of specialization.

In addition to the regulations laid down, each candidate for the Dip. Stat./M.Stat. award, must comply with relevant statutes of the University. Attention is drawn especiallly to University requirements for minimum residence and minimum as well as maximum period of registration which may be more extensive than indicative below.

The M.Stat. Programme is an immediate follow-up of the Dip.Stat. programme and is awarded on the basis of a thesis of an acceptable standard on an approved topic. After fulfilling the residential requirements, the candidate may return to his national Bureau of Statistics to write up his M.Stat. thesis.

Written examination, for the Dip.Stat. shall be taken in all papers at the end of the academic year or soon after.

Regulations

To be considered for admission to the Dip.Stat./M.Stat. programme, the applicant must have as minimum requirements:

(a) Have obtained a first degree in Statistics combined with Economics or Mathematics or an allied subject or equivalent professional training (e.g. B.Stat., M.I.S.)

(b) Have obtained at least a second class lower degree or equivalent in the relevant training

(c) Have worked in professional applied work for at least two years after graduation with any degree of at least lower second class or equivalent.

The duration of the Dip.Stat., programme will be one academic year of nine months. Candidates shall be required to sit and pass examination papers at the end of the courses as follows:

(a) Three compulsory subjects (1 three-hour paper in each paper)

1. Statistical methods
2. Design of sample surveys
3. Computer methods for statistical analysis

(b) One optional subject (3 papers, each of 3 hours duration)

4. National accounts
5. Demography and social statistics
6. Economic statistics
7. Agricultural statistics
8. Sampling technology
9. Advanced computer techniques

(c) One practical paper in the optional subject and one in the compulsory papers. Duration of each paper will be four hours.

The candidate shall be required to pass each compulsory subject individually and pass the optional subject on the aggregate. The pass mark shall be 50 per cent. Progressive Assessment shall contribute 33 1/3 per cent to over-all assessment at the end of the course.

Candidates who fail any subjects in their examination shall be referred in the subjects after a period of about three months.

All candidates who satisfactorily complete the Dip.Stat. programme will qualify for the award of the Dip.Stat.

Candidates wishing to join M.Stat. programme are required to have obtained an overall good pass in the Dip.Stat. examination or equivalent.

Candidates wishing to do M.Stat. programme after the postgraduate Diploma in Statistics, will be required to submit a thesis of acceptable standard on an approved topic, not earlier than 12 months from the date of registering for the M.Stat. programme.

10. Fellowships for Trainees. Lack of Fellowships is one aspect that makes it difficult to implement regional training programmes. The following seem to be possible ways of raising fellowships to send students to this Institute:

(i) Both at the UNDP Working Group and at the 10th Session of the Conference of African Statisticians, the representative of the EEC indicated that there were fellowships in the European Development Fund, available under the Lome Convention, for training nationals for ACP countries. As far as Africa was concerned these were by and large untapped, and in any case were being used almost solely by the Francophone countries, which were formerly associated with EEC under the Lome Convention.

It was indicated that the EEC would be willing to consider applications for fellowships under STPA, but that the applications had to be made by the individual countries concerned. The EEC Resident Representative in the user country will brief on how to go about this.

(ii) If the user country is a member of the Commwealth of Nations, it could also apply to the Ministry of Overseas Development, UK, for a fellowship from the Third World, which the UK representative indicated was more or less entirely unused. The Fund is meant to assist candidates from a Third World (Commonwealth) country. Correspondence on this matter should be sent to:

- The Statistical Adviser
- Commonwealth Fund for Technical Co-operation
- Marlborough House
- London SW1.

(iii) Living Conditions

University students are accommodated on the University campus in University Halls of Residence.

INSTITUTE OF STATISTICS AND APPLIED ECONOMICS
MAKERERE UNIVERSITY

INTAKE AND OUTPUT FIGURES OF TRAINED
PERSONNEL SINCE 1977

| | INTAKE | | | OUTPUT | | |
|---|---|---|---|---|---|---|
| Year | B.Stat. | B.Sc. | Total | B.Stat. | B.Sc. | Total |
| 1977/78 | 28 | 26 | 54 | 21 | 8 | 29 |
| 1978/79 | 27 | 49 | 76 | 15 | 27 | 42 |
| 1979/80 | 33 | 31 | 64 | 24 | 26 | 50 |
| 1980/81 | 28 | 36 | 64 | 29 | 21 | 43 |
| TOTAL | 116 | 142 | 258 | 89 | 82 | 164 |

| | | | |
|---|---|---|---|
| 1. | Country | : | Nigeria |
| 2. | Name of the Centre | : | Department of Statistics |
| 3. | Attached to | : | University of Ibadan |
| 4. | Address | : | Department of Statistics<br>University of Ibadan (Nigeria) |
| 5. | Name of the Director | : | Professor S.O. Adamu |

6-7. Objects and Historical Background.

The Department was established by Senate in 1965 but did not start functioning as an independent Unit until 1973. Prior to 1973, the training of prospective statisticians was largely limited to the Departments of Mathematics and Economics. Hence when a two-year course in statistics leading to a Professional Diploma in Statistics was established in 1965 with the assistance of UNDP to meet the urgent need for trained middle level professional statisticians it was housed in the Department of Economics.

The initial primary emphasis of the Department of Statistics has been on the production of statisticians to reduce the critical manpower shortage and the offering of service courses to other teaching or research units of the University. The first degree programme is such as to maintain a judicious balance between theory and practice. The graduates have either found employment in various arms of government or the private sector or are pursuing postgraduate studies.

In 1977 higher degree programmes were introduced with an initial intake of four students for the one-year M.Sc. The first M.Sc. graduates finished in October 1978. In continuation of its efforts to combat the manpower problem and in order to offer further training opportunities for working statisticians, a postgraduate diploma in statistics was initiated. The programme started with six students in 1978 with financial support from the Federal Office of Statistics on a crash training basis. As from October 1981, the Department will take full control and housing of the Professional Diploma in Statistics which was previously housed in the Department of Economics since its establishment.

Apart from the above, the Department runs two short courses on a regular basis during the months of August and September since 1978/79 session. These courses are:

Course A - Sample Survey Methods and Problems.

Course B - Remedial/Refresher Course in Statistics.

Numbers of participants in the previous two occassions were

| | 1978/79 | 1979/80 |
|---|---|---|
| Course A | 10 | 17 |
| Course B | 25 | 21 |

The Department also undertakes consulting work for those requiring statistical advice both from within and from outside the University. This is being organised under a unit of the Department known as Statistical Laboratory with one of the teaching staff as its Director.

The staff of the Department engage in research of both national and international interest in various aspects of methodology and general applications. Apart from their teaching, research and consulting commitments, some have and are offering national services in various forms e.g. serving as Chairman of the National Advisory Council on Statistics, as Chairman of a State Economic Council and as member of a special task force on Agricultural Statistics.

8. Academic Staff

The Academic staff is composed of the following full-time members (including one Indian) paid by the University of Ibadan:

2 Professors
3 Senior Lecturers
2 Lecturer Grade I
1 Lecturer Grade II
1 Research Fellow
1 Graduate Assistant

9. Teaching Programmes

All our teaching programmes are organised under the University semester system and courses are evaluated in terms of semester course units. A semester course unit is defined as one lecture/tutorial contact hour per week, or one three-hour laboratory or practical class per week throughout a semester teaching period (a period of fifteen weeks) or an equivalent amount of other assigned study or practical experience or any combination of these. The courses are graded in levels. A compulsory course is one that must be taken and passed, a required course must be taken but not necessarily passed while an elective course is taken in order to get enough units for the degree or diploma. All the courses offered in the Department for various programmes are listed later.

A. Professional Diploma in Statistics

(i) Duration: 2 years

(ii) Eligibility for Admission:

Candidates for admission to the course are selected from amongst those who hold

(a) The West African School Certificate with passes at credit standard or the General Certificate of

Education with passes at Ordinary Level on one and the same occasion in English Language, Mathematics and three other subjects except that candidates who have only a pass and not a credit in English may be considered if they have six credits at not more than two occasions and

(b) The Certificate of the Statistics Training Course of the Federal Office of Statistics Training School or its equivalent. Other candidates suitably recommended may be permitted to qualify for selection by taking the concessional entrance examination.

(iii) Output since 1977:

| | 1976/77 | 1977/78 | 1978/79 | 1979/80 |
|---|---|---|---|---|
| Output: | | 28 | 16 | 20 |

(iv) Regulation:

(a) Minimum Requirements for the Diploma:

100 Level Courses

Statistics:

Compulsory Courses: STA 111, 121, 131, 161, 162 (9 units)

Mathematics: At least 5 units must be passed.

Economics: At least 4 units must be passed.

Computer Science: At least 2 units must be passed.

200 Level Courses

Statistics:

Compulsory Course: STA 214, 222, 232, 261, 262, 291, 292. (13 units)

Required Courses: At least 5 units selected from STA 233, 234, 241, 270 must be passed.

There are other courses in statistics, mathematics, computer science and others from which to supplement to get adequate number of units for the Diploma.

Total number of units that can be registered for per semester is 14 or 28 per session.

(b) Awards:

To qualify for the award of a diploma, a candidate must be credited with a minimum of 20 units at each level. All courses are graded out of a maximum of 100 and the pass mark shall be 40. The Diploma is awarded either as pass or with distinction. A candidate will be awarded a distinction provided he obtains average mark of 70% or above in the best courses, including compulsory ones, totalling 24 units of 200 level courses. Minimum average mark for a pass is 40%. The average mark is a weighted average mark - each mark is weighted by its units.

B. B.Sc. Programme

(i) Duration: 3 years

(ii) Eligibility for Admission

(a) For direct entry and in addition to the general University regulation, candidates for single honours in Statistics must pass Mathematics and at least any other one subject (from the University approved list) at the G.C.E. Advanced Level or its equivalent or

(b) Candidates must be holders of the University of Ibadan Professional Diploma in Statistics who are qualified under A.ii(a) above.

(iii) Output since 1977:

| | 1976/77 | 1977/78 | 1978/79 | 1979/80 |
|---|---|---|---|---|
| Output: | | 13 | 8 | 30 |

1980/81 300 level students: 15

(iv) Regulations:

(a) Minimum Degree Requirements:

100 level

Statistics:

Compulsory Courses: STA 111, 121, 161, 162 (6 units)

Mathematics: At least 6 units must be passed.

300 level

Statistics:

Compulsory Courses: STA 301, 313 322 (7 units)

Required Courses: At least 5 units from STA 311, 323, 336, 337, 370 must be passed.

There are other courses in statistics, mathematics, computer science and others at different levels from which to supplement to get the necessary units for the degree.

Total number of course units that can be registered for per semester is 14 or 28 per session.

(b) Awards:

To qualify for the award of a degree, a candidate must be credited with a minimum of 30 units at each level. All courses are graded out of a maximum of 100 and the pass mark shall be 40.

The class of the degree shall be awarded on the basis of the final aggregate mark as follows:

| | |
|---|---|
| 70% and above | 1st Class Honours |
| 60% - 69% | 2nd Class Honours Upper Division |
| 50% - 59% | 2nd Class Honours Lower Division |
| 40% - 49% | 3rd Class Honours. |

The final aggregate mark is based on the weighted average mark of the prescribed minimum number of units in the 200 and 300 levels including all the compulsory courses.

C. Postgraduate Diploma in Statistics

(i) Duration: One Session

(ii) Eligibility for Admission:

Candidates for admission to the programme shall normally be holders of the degree of Bachelor with some knowledge of Mathematics not below the level of the General Certificate of Education at Advanced level or its equivalent.

(iii) Intake and Output since 1978.

| | 1978/79 | 1979/80 |
|---|---|---|
| Output: | 3 | 6 |

1980/81 Intake : 13

(iv) Regulations

(a) Minimum Requirement for the Diploma:

Candidates admitted for the course shall be required to take and pass:

STA 411, 412, 413, and 450;

six units selected from STA 421, 422, 423, 424 and 425; and

a project, STA 401 which shall be given a weight of 4 units.

To qualify for the award of the Diploma, a candidate must be credited with a minimum of 22 units.

(b) Awards:

The diploma may be awarded with distinctions to a candidate who attains an average score of 70% or above in the examination. Minimum average score for a pass is 40%.

D. M.Sc. Programme

(i) Duration: 1 year (12 months)

(ii) Eligibility for Admission:

Candidates for admission to the programme shall normally be graduates of the University of Ibadan or of other universities recognised by Senate who possess the degree of bachelor in Statistics or related disciplines. Candidates who possess approved postgraduate diploma in Statistics or any relevant qualification and/or experience may also be considered for admission.

(iii) Intake and Output since 1978

| | 1978/79 | 1979/80 |
|---|---|---|
| Output: | 4 | 7 |

Intake for 1980/81: 9

(iv) Regulation:

Candidate admitted to the programme shall be required to take and pass:

STA 451, 461 and 462;
at least any two of STA 463, 464, 465, 466, 467, 468, 469 and 470 and a project which shall be weighted as 4 units.

To qualify for the award of the degree, a candidate must be credited with a minimum of 16 units.

M.Phil. Programme

a. Admission to the programme shall be open to:

(i) Candidates who have attained a 50% level of pass in the course examinations for the M.Sc. degree programme in statistics of the University of Ibadan, and made satisfactory progress in their projects.

(ii) Candidates who posses a masters degree in Statistics, each case being considered on its merit.

b. Candidates admitted to the programme may be required to take relevant courses on the advice of the Department.

c. Areas of specialization shall be decided by candidates in consultation with the Head of Department and their supervisors.

d. The degree shall be awarded on the basis of a dissertation resulting from independent research.

F. Ph.D. Programme

a. Admission to the programme shall be open to:

(i) Candidates who have attained a 60% level of pass in the course examinations for the M.Sc. degree programme in Statistics of the University of Ibadan, and made satisfactory progress in their projects.

(ii) Candidates for the M.Phil. degree programme of the University of Ibadan who have satisfied the course requirement for the degree and been permitted by Senate to upgrade their registration on the basis of satisfactory progress in research.

(iii) Candidates who possess the M.Phil. degree or equivalent qualification in Statistics; each case being considered in its own merit.

Candidates admitted to the programme may be required to take relevant courses on the advice of the Department. Areas of specialization shall be decided by candidates in consultation with the Head of Department and their supervisors.

The degree shall be awarded on the basis of a thesis embodying original contribution to knowledge.

Current Enrolment for M.Phil or Ph.D: 8

## List of Courses

### 100 Levels:

STA 101: Introductory Statistics I - 2 units
STA 111: Elementary Statistics I - 2 units
STA 121: Elementary Statistics II - 2 units
STA 131: Statistical Organisation - 2 units
STA 161: Statistics Practical I - 1 unit
STA 162: Statistics Practical II - 1 unit

### 200 Level:

STA 201: Statistical Methods for Experimental Science - 2 units
STA 202: Statistical Methods for Social Sciences - 2 units
STA 211: Probability - 2 units
STA 213: Distribution Theory - 2 units
STA 214: Probability and Distribution Theory - 3 units
STA 221: Statistical Methods I - 3 units
STA 222: Statistical Inference I - 2 units
STA 231: Statistical Quality Control - 3 units
STA 232: Introduction to Economic and Social Statistics - 2 units
STA 233: Sample Survey Design I - 3 units
STA 234: Experimental Design - 3 units
STA 241: Regression Analysis - 1 unit
STA 242: Introduction to Non-parametric Methods - 1 unit
STA 243: Introduction to Multivariate Methods - 1 unit
STA 251: Introduction to Operations Research - 2 units
STA 261: Statistics Practical I - 1 unit
STA 262: Statistics Practical II - 1 unit
STA 270: Introduction to Official Statistics - 2 units
STA 291: Assignment Essay - 2 units
STA 292: Practical Project - 3 units

### 300 Level:

STA 301: Practical Project - 3 units
STA 311: Introduction to Stochastic Processes - 2 units
STA 313: Distribution Theory II - 2 units
STA 322: Statistical Inference II - 2 units
STA 323: Logical Background of Statistics - 1 unit
STA 324: Sequential Analysis - 1 unit
STA 325: Non-parametric Methods - 2 units
STA 326: Multivariate Methods - 2 units
STA 327: Decision Theory - 1 unit
STA 331: Introduction to Time Series Analysis - 1 unit
STA 333: Econometric Methods - 2 units
STA 334: Psychometric Methods - 1 unit
STA 335: Biometric Methods - 2 units
STA 336: Experimental Design II - 2 units
STA 337: Sample Survey Design II - 2 units
STA 370: Official Statistics - 1 unit
STA 372: Demography - 2 units
STA 373: Introduction to Actuarial Statistics - 2 units
STA 374: Educational Statistics - 2 units

STA 375: Medical Statistics - 2 units

400 Level:

STA 401: Practical Project - 4 units
STA 411: Probability and Distribution Theory - 3 units
STA 412: Methods of Statistical Inference and Decision - 3 units
STA 413: Design and Analysis of Experiments and Surveys - 3 units
STA 421: Operations Research - 3 units
STA 422: Econometric Methods - 3 units
STA 423: Biometric Methods - 3 units
STA 424: Demographic Techniques - 3 units
STA 425: Multivariate Analysis - 3 units
STA 450: Official Statistics - 3 units
STA 451: Practical Project - 4 units
STA 461: General Statistical Theory - 3 units
STA 462: Advanced Statistical Methods - 3 units
STA 463: Design and Analysis of Experiments - 3 units
STA 464: Design and Analysis of Sample Surveys - 3 units
STA 465: Time Series
STA 466: Mathematical Programming and Games Theory - 3 units
STA 467: Advanced Econometric Methods - 3 units
STA 468: Advanced Demographic Analysis - 3 units
STA 469: Advanced Biometric Methods - 3 units
STA 470: Topics in the Methodology of Official Statistics - 3 units

10. Fees:

| | Tuition ₦ | Residence ₦ | Students' Union ₦ |
|---|---|---|---|
| 1. Nigerian Students | | | |
| 1st Degree | - | 90.00 | 3.05 |
| Non-Degree Diploma | - | 90.00 | 3.05 |
| Postgraduate Diploma | 200.00 | 90.00 | 3.05 |
| M.Sc. M.Phil & Ph.D. | 120.00 | 90.00 | 3.05 |
| 2. Foreign Students | | | |
| 1st Degree | 700.00 | 90.00 | 9.05 |
| Non-degree Diploma | 700.00 | 90.00 | 9.05 |
| Postgraduate Diploma | 1,000.00 | 90.00 | 9.05 |
| M.Sc. M.Phil & Ph.D. | 1 000.00 | 130.00 | 9.05 |

Student may feed in the University Cafetarias on the basis of pay-as-you-eat. A sum of ₦ 399.00, according to a Government directive, is to be charged for feeding for a session or ₦1.50 a day for 3 meals.

11. Fellowship:

University scholarships exist for higher degree to the value of N1,000.00 per session for non-sponsored students. There are other overseas' schemes. All are centrally administered.

12. Residential Arrangements:

Most university students are accommodated in Halls of Residents but there is also 'off campus' arrangement. For the B.Sc. Programme, it is compulsory for a student to stay 'off campus' in the 2nd year of the course except for some exceptional cases like sportsmen/women. Higher degree students are normally in resident while postgraduate diploma students are 'off campus'. The 'off campus' arrangement is usually adequate because of reasonable accommodation around the University campus.

| | | | |
|---|---|---|---|
| 1. | Country | : | Tanzania |
| 2. | Name | : | Eastern Africa Statistical Training Centre |
| 3. | Attached to | : | University of Dar-es-Salaam |
| 4. | Address | : | P.O. Box 35103 Dar-es-Salaam Tanzania. Telephone No. 48054 & 48309 |
| 5. | Name of the Director | : | Joshua Joseph Mpogolo |

6. Object:

The Centre trains sub-professional personnel in statistical methods and techniques at middle (certificate) and intermediate (diploma) levels. Socio-economic surveys (field projects) are organized and conducted by the Centre in collaboration with government agencies or parastals. The Centre may prepare, organize and advise on statistical seminars or conferences if called upon to do so by government agencies or parastals. It does, on alternate years, conduct an 8 week course for serving personnel without prior statistical knowledge who nevertheless may be required to perform simple statistical assignments.

7. Brief Historical Background

The Eastern Africa Statistical Training Centre (known as the East African Statistical Training Centre before April, 1978) was established in July, 1965. The third session of the conference of African statisticians held in Addis Ababa (October 1963) requested the United Nations Economic Commission for Africa (ECA) to assist in the establishment of a statistical training Centre for the East African sub-region. The birth of such a centre became a reality at a Nairobi meeting held in February, 1964 between the East African Common Services Organization (later transformed into the East African Community) and the United Nations. The Centre was handed over to the East African Community in August, 1972.

8. Academic Staff

The permanent academic staff comprises three senior lecturers and three lecturers with an average of six teaching hours per week. External lecturers are invited as and when need arises for about 300 hours in the year.

9. Courses

A. Certificate Course (Middle Level)

9.1 Duration: Ten months

9.2 Eligibility for admission:

To qualify for admission to the Certificate Course (Middle Level) a candidate should

(a) Hold the ordinary level Certificate of education as a minimum qualification with passes in Mathematics and English. The Course is pretty difficult for students with a poor mathematical background.

(b) Have at least a year's working experience in statistical assignments.

(c) Pass an entrance examination organized by the Centre in November, each year.

9.3 Number of places offered in 1980/81: 70.

9.4 Teaching programme and regulations:

A. Certificate Level Course (Middle Level). The Centre started functioning with the Middle Level Course in August, 1965 and the first Intermediate Level course started in 1966. Both courses are of ten (10) months duration, beginning in July and ending in April, the following year. The training programme in the Certificate (Middle Level) course the following subjects.

| | | |
|---|---|---|
| (a) | Statistical Theory | 504 hours |
| (b) | Applied Statistics | |
| (c) | Mathematics | 216 hours |
| (d) | Economics | 154 hours |
| (e) | Practicals (Statistical Computation and elements of accounting) | 72 hours |
| (e) | Field Project | 100 hours |

Awards: Successful Certificate/Middle Level personnel are awarded Certificates.

Examinations: There are two examinations held during the ten months course i.e. terminal examinations held at the beginning of November and final examinations held in April. To pass the Centre's examinations a candidate has to score at least 50 per cent in each subject.

A candidate having passed each subject and having an average of at least 70 percent is deemed to have passed with distinction.

B. Diploma Course (Intermediate Level)

1. Duration: ten months

2. Eligibility for admission.

To qualify for admission a candidate should:

(a) Posses the Centre's certificate or other equivalent qualification e.g. a certificate of the Calcutta International Statistical Education Centre, a

certificate of the Zambian in-service statistical Training course or holders of the Preliminary Level certificate of the Institute of Statisticians.

(b) Pass the Centre's entrance examination.

3. Number of places offered in 1980/81: 30

4. Teaching programme covers the following subjects:

- Statistics 504 hours
- Economics 154 hours
- Mathematics 216 hours
- Field Project (survey) 100 hours

Awards: Successful Intermediate/Diploma personnel are awarded Diplomas

Examination: There are two examinations held during the ten months cource i.e. terminal examination held at the beginning of November and final examinations held in April. To pass the examination a candidate has to score at least 50 per cent in each subject. A candidate having passed each subject and having an average of at least 70 per cent is deemed to have passed with distinction.

C. Eight Week Short Course

This course which is organised specifically for those middle or lower level statistical personnel whose duties involve the use of Statistics but have had no formal training in Statistics, runs from mid-April to mid-June in alternate years. The programme consists of elementary Statistical Theory, Applied Statistics, Mathematics, Economics and Practicals. Currently this has been confined to participants from the host country i.e. Tanzania, but arrangements have been made to hold a similar course in Kenya and Uganda· in fact Kenya may have a first eight-week course from mid-June to mid-August in 1981.

10-11 Tuition fees and fellowships

Fellowships: Sponsoring governments or organisations are required to pay 18,000 Tanzanian shillings (approximately 2,140 dollars or 1,800 units of account) to cover the variable costs i.e. accommodation, stipends, purchase of books and stationery, laundry expenses, caution money and membership in socio-cultural activities (students union clubs etc). A formula is being worked out how to cover the fixed costs i.e. to include all the cost of training in the fellowship (e.g. salaries, transport, maintenance of buildings, equipment etc) either by way of fellowships from external donors or by contributions by the user countries.

12 Living Conditions:

Since its inception, the centre has been accommodated at the main campus of the University of Dar-es-Salaam where it occupies four offices and two lecture rooms. The students are housed at the University's halls of residence and are free to utilize the University Library as well as other socio-cultural facilities.

13. Intake and Output figures since 1977, todate.

Eastern Africa Statistical Training Centre Intake and Output figures for Certificate/Middle Level and Diploma/ Intermediate Level 1977 to 1981.

| | CERTIFICATE/MIDDLE LEVEL | | DIPLOMA/INTERMEDIATE | |
|---|---|---|---|---|
| YEAR | INTAKE | OUTPUT | INTAKE | OUTPUT |
| 1977/78 | 23 | 23 | 16 | 16 |
| 1978/79 | 26 | 26 | 19 | 17 |
| 1979/80 | 66 | 31 | 28 | 25 |
| 1980/81 | 65 | * | 26 | * |

* The results of the 1980/81 Final Examination were not known at the time of preparing this directory

| | | | |
|---|---|---|---|
| 1. | Country | : | Botswana |
| 2. | Name of the Centre | : | Department of Statistics |
| 3. | Attached to | : | University College of Botswana |
| 4. | Address | : | Department of Statistics<br>University College of Botswana<br>P.O. Box 32<br>Gaborone (Botswana) |
| 5. | Name of the Director: | : | Prof. R.K. Pillai |

6-7 Object and Historical Backgrounds:

The Department of Statistics of the University College of Botswana was part of the UNESCO Regional project set up in 1973 at the University of Botswana, Lesotho and Swaziland (UBLS). The training programme of that project was supposed to assist in the formation of higher middle level statisticians in response of the demand of the countries concerned and introduce statistical methods in other faculties such as Economics. Since the dissolution of the UBLS in 1976 the centre has taken on diploma and professional training at degree level in addition to the certificate level.

8. Academic Staff:

The permanent academic staff consists of a professor, a senior lecturer and three lecturers. They are all expatriates.

9. Course:

9.1 and 9.2 Type of courses offered and duration

(i) One year certificate course in statistics

(ii) Two year diploma in statistics

(iii) Four year degree course in statistics.

9.3 Admission requirements and regulations.

Candidates for the first level of these courses are expected to have the required O level passes with a pass in mathematics. If they are successful at the end of the first year they are awarded a middle level certificate. Good certificate candidates can then proceed to a two year diploma course. At the end of the third year, successful candidates can then proceed to the fourth year at the end of which they are awarded a degree in statistics.

9.4 Number of places offered in 1978:

- Certificate: 30 places
- Diploma: 20 places
- Degree: 20 places

9.5 Teaching Programme

a) Single Major Degree Programme

Year I
- Elements of statistics
- Mathematics for Social Sciences

Year II
- Introduction to statistics
- Introduction to Probability

Supplementary Course: Calculus and linear algebra

Year III
- Statistical Methods: Tools & Techniques
- Probability Distributions
- Computer Programming
- Demographic Methods

Supplementary Course: Operations Research or Survey Research Techniques

Year IV
- Statistical Inference
- Sampling Techniques
- Design and Analysis of Experiments
- Econometrics and Industrial Statistics

Supplementary Course: Introduction to Stochastic Processes or student project

b) Double Major Degree Programme

Year I - same as single major
Year II -
Year III
- Statistical Methods: Tools & Techniques
- Probability Distributions

Supplementary Course:
- Computer Programming or
- Demographic Methods or
- Operations Research or
- Survey Research Techniques

Year IV
- Statistical Inference
- Sampling Techniques

Supplementary Course:
- Design & Analysis of Experiments or
- Econometric and Industrial Statistics or
- Introduction to Stochastic Processes or
- Student Project

c) Diploma in Statistics

Year I
- Introduction to Statistics
- Survey Methods
- Introduction to Probability
- Calculus and Linear Algebra
- Planning in Botswana
- Computer Programming

d) *Certificate in Statistics*

Year I
- English Communication Skills
- Basic Statistical Methods
- Applied Statistics
- Mathematics for Social Sciences
- Basic Economics
- Official Statistics

UNIVERSITY OF BOTSWANA AND SWAZILAND
UNIVERSITY COLLEGE OF BOTSWANA

OUTPUT DURING THE PAST FOUR YEARS

| YEAR | CERTIFICATE IN STATISTICS | DIPLOMA IN STATISTICS | DEGREE |
|---|---|---|---|
| 1978 | 9 | 1 | 11 |
| 1979 | 9 | 2 | 10 |
| 1980 | 15 | 6 | 4 |
| 1981* | 12 | 3 | 7 |

* The 1981 results are to be ready by June 1981 the numbers given are the numbers currently undergoing the programme.

*Living conditions*

Full-time students are required to live in an approved hall of residence on the campus. The halls of residence are well equipped and appointed.

1. Country : Lesotho

2. Name of the Centre : Department of Statistics

3. Attached to : National University of Lesotho

4. Address : P.O. Roma Lesotho
Lesotho
Cable address : Uniter, Roma via Maseru
Telex : 303 BB
Telephone : Roma 201

5. Name of the Director

6. Object:

Statistical training for government and industry; provision of undergraduate background for professional statisticians (who will be pursuing specialised programmes overseas).

7. Brief Historical Background

This centre was founded in 1973 when the combined UBLS statistical project began receiving assistance from UNDP/UNESCO. Now a separate programme is being offered by the Department of Statistics National University of Lesotho since 1976 when UBLS was dissolved and UNDP/UNESCO assistance has been phased out.

8. Academic Staff

The permanent academic staff comprises six lecturers (four expatriates and two nationals).

9. Courses

A. Certificate Programme in Statistics

(i) Duration two years

(ii) Entrance requirements: Normal entrance requirement for the certificate programme in statistics is the Cambridge Overseas School certificate or equivalent. A pass in mathematics is desirable. Mature age entry qualifications apply for students aged 19 or above provided he or she possesses suitable knowledge, skill or aptitude. This ability will be determined by a committee of Government and University representatives.

(iii) Number of places in 1978 50

(iv) Course programme

| Course | Semester | Year |
|---|---|---|
| Six common first year English<br>M103-4 Mathematics | 1 | 1 |
| Six common first year English<br>M104-4 Mathematics<br>ST 102-3 | 2 | |
| 8/32 Elective FESS courses in CFY during year 1 | | |
| ST 201-3 Introductory Statistics I | 2 | 1 |
| ST 201-1 Official Statistics | | |
| ST 207-2 Introduction to Computer Methods | | |
| M 206-5 | | |
| ST 202-3 Introductory Statistics II | 2 | |
| ST 204-4 Introductory Probability | | |
| ST 208-3 Computer Programming | | |
| ST 404-3 Demography | | |
| 8/32 Elective FESS courses during year | 2 | |

(v) Assessment: Candidates who have got an over-all weighted grades of 40 per cent in year 1 are allowed to continue to year 2. Candidates who in year 2 have got an over-all weighted grade of 45 per cent are awarded certificate in statistics.

(vi) Transfer to diploma programme: Certificate holders with an over-all weighted grade 50 per cent and above and with no F's are eligible to transfer to the diploma programme in statistics.

B. Diploma in Statistics

(i) Duration: One year

(ii) Entrance requirements: Certificate in statistics with an over-all weighted grade of 50 per cent and with no F's.

(iii) Number of places offered in 1973:

(iv) Course programme

| Course | Semester | Year |
|---|---|---|
| ST 301-3 Theory of Statistics Distributions | 1 | 1 |
| ST 303-4 Applied Statistics I | | |
| ST 305-3 Introduction to Sample Surveys | | |
| ST 302-3 Theory of Statistical Inference | 2 | |
| ST 304-4 Applied Statistics II | | |
| ST 410-2 Statistical Seminar Series | | |
| ST 413-4 Research paper | | |
| 9/32 Elective FISS courses during year | | |

(v) Assessment Candidates who have got an over-all weighted grade of 45 per cent are awarded the diploma in statistics.

(vi) Transfer to degree programme Diploma holders with an over-all weighted grade of 50 per cent and above and with no F's are eligible to enter the 4th year of the degree programme in statistics with statistics as single major.

C. Bachelor of Arts (Stats. Single and double major)

(i) Duration 4 years

(ii) Entrance requirements The normal basic requirement to the B.A. (Stats. single and double major) courses shall be a Cambridge Overseas School Certificate (COSC) in the 1st or 2nd Division with a credit in English language. Recognized alternative qualifications shall be a Central Certificate of Education provided that the candidate:

(a) Has taken examination at 'O' level in at least six subjects taken over a two sittings

(b) Has passed at 'O' level in at least four subjects including English

(c) Has a grade aggregate for six subjects not exceeding 34

(iii) Number of places offered in 1973:

40 (single major)
40 (double major)

(iv) Course programme: In the first year students will normally be registered jointly in the Faculty of Social Science and in the Faculty of Humanities and follow a Common First Year Programme of study arranged jointly by both faculties.

Common first year for humanities and social science

- 12 units of communication skills
- 6 units of African studies
- 6-10 units of mathematics/statistics

Following the common first year B.A. students can proceed to a single major programme or to a double-major programme in statistics. The most popular programme is a B.A. double-major suitable. Other major subjects in a double major programme are Economic Administration, Accounting Mathematics, Geography, Biology, etc....

| Course | Units | Semester | Year |
|---|---|---|---|
| Introductory statistics I | 3 | 1 | 2 |
| - Official Statistics | 1 | | |
| - Introduction to computer methods | 2 | | |
| - Mathematics for social science I | 2 | | |
| | 8 | | |
| Introductory statistics II | 3 | 2 | 2 |
| - Introductory probability | 4 | | |
| - Computer programming | 2 | | |
| - Mathematics for social science II | 2 | | |
| | 11 | | |
| Theory of statistics - Distributions | 3 | 1 | 3 |
| - Applied statistics I | 4 | | |
| - Introduction to Sample Surveys | 3 | | |
| | 10 | | |
| Theory of Statistics - Inference | 3 | 2 | 3 |
| - Applied statistics II | 4 | | |
| | 7 | | |
| Statistical Seminar Series | 2 | 1 | 4 |
| - Research paper (in conjunction with 2nd major subject) | 4 | | |
| | 6 | | |
| Theory and Practice of sampling | 4 | 2 | 4 |

Elective course: A minimum of three units from

- 4 Introduction to operations research (or)
- 3 Theory and practice of (or)
- 3 Design of Experiments
- 4 Econometrics
- 4 Demography

13

4 practical work period between years 3 and 4

53 Total number of units required for a double major programme in statistics.

All courses are designed to have a strong practical application and the primary intention is to provide students with tools of quantitative analysis that have general applicability to other subjects studied at the University.

(v) Course assessment: All the students enrolled in the Department of Statistics have to sit for written exams at the end of each semester.

Performance in a course shall be assessed on a numerical scale ranging from 0 to 100. and published course grades shall be on a six point letter scale according to the following equivalent:

| | | |
|---|---|---|
| A | = 80 and above means | Outstanding |
| B | = 70-79 | " Very Good |
| C | = 60-69 | " Good |
| D | = 50-59 | " Pass |
| E | = 40-49 | " Fail (supplementable) |

At the end of each academic year, provided a student has not repeated a year, his/her over-all weighted mean (OWM) shall be the best possible weighted average computed from all core courses. Then come the following situation:

| | |
|---|---|
| - Pass mark: | O.W.M. of at least 50 |
| - Repetition: | O.W.M. from 40 to 49 |
| - Discontinuation: | O.W.M. below 40 or failling into repeating category a second time. |

(vi) Awards

At the end of Year IV a student shall be awarded a B.A. (Stats.) degree if and only if he/she has an O.W.M. of at least 50.

10. Tuition fees

National 181 R

Foreign quota 481 R

Others 2025 R

The majority of non-nationals enter this institution as a result of United Nations grants given to refugees. The quota is about 20 per cent of the student population which is approximately 800) grants are not usually given specially for study in a particular area. The students indicate their preference in their second year.

11. Application for entry

Sets of application forms are obtained from and returned to: The Admissions Secretary, National University of Lesotho, P.O. Roma Lesotho. Fee for 1R for national and 5R for others. Forms should be returned within 30 days and not later than 1st April.

12. Living conditions

Most of the full-time students live in residence and the University is vigourously expanding present facilities.

| | | | |
|---|---|---|---|
| 1. | Country | : | Ghana |
| 2. | Name of the Centre | : | Department of Statistics |
| | | | Institute of Statistical, Social and Economic Research (ISSER) |
| 3. | Attached to | : | University of Ghana |
| 4. | Address | : | Department of Statistics<br>University of Ghana<br>P.O. Box 115<br>Legon Ghana |
| | | : | ISSER<br>P.O. Box 74<br>Legon Ghana |
| 5. | Names of the Directors | : | Professor K. Twum-Barima<br>Director of ISSER |
| | | | Dr. S.I.K. Odoom<br>Head of the Department of Statistics |

6-7 Object and Historical Background:

Profession-oriented statistical training in Ghana started in 1961 at the middle level, at the Achimota Statistical Training Centre near the University of Ghana. This was a UNDP - sponsored centre which offered courses leading to a certificate in statistics. The school was later absorbed by the Institute of Statistical, Social and Economic Research (ISSER) which was established in 1962 within the University of Ghana. ISSER offered a one-year training for the certificate and a further year's training for a Higher Certificate in Statistics was introduced in 1979/71 academic year. Subsequently the training programme at ISSER was expanded to include postgraduate instruction in statistics for graduates in other subject areas, mainly in the social sciences. In addition to the training programmes available at ISSER, other departments in the University offered specific courses in statistics at different levels to their students.

In 1972 the University of Ghana decided to set up a statistics unit to offer formal instruction in statistics at undergraduate level, to co-ordinate the teaching of statistics in the University and to relieve ISSER, which had been set up primarily as a research establishment, from most of its teaching commitments.

The statistics unit was located within the department of mathematics and ran programmes of undergraduate and graduate level courses as well as service courses for departments in the faculties of Science, Agriculture and Social studies.

The programmes offered by the statistics unit have a substantial practical component, including a vacation training scheme under which students are attached to selected organizations in the government and private sectors to acquire practical experience in the kind of work they may have to do on graduation.

The first degree programme began in October 1973 with 38 students. Enrollment in the subsequent years quickly passed the 100 marks. Owing to this increase in student numbers and its attendant administrative problems, and the need to develop facilities for the co-ordination of statistical training within the University, the University of Ghana decided to turn the unit into a full Department of Statistics with effect from January 1979.

The facilities of the centre is available for the training of professional statisticians and middle level statistical personnel for government, for private industry and research institutions. It's training programmes is open to personnel from other African countries.

8. Academic staff

The teaching staff of the department at present consists of:

(i) Full-time members of the department of statistics

One Associate Professor

One Senior Lecturer

Two Lecturers

(ii) Research staff of the Institute of Statistical, Social and Economic Research (ISSR) University of Ghana who teach part-time in the department

One Senior Research Fellow

One Research Fellow

(iii) One part-time lecturer (from outside the University)

(iv) Temporary teaching assistants

9. Courses

The Department of Statistics offers programmes leading to a Bachelor's degree (B.A. or B.Sc.) and a graduate programme leading to M.Sc. in Statistics.

A. The B.A. B.Sc. Degree Programme

The bachelor's degree programme in Statistics is designed primarily to train candidates to take up careers as professional statisticians. In addition there are courses for students whose major interests are in subject areas other than Statistics, mainly the social sciences, biology and agriculture.

Undergraduate Degree programmes of the University of Ghana have to conform to certain general requirements:

In the first year each student is required to study three subjects, spending his time equally among these three. In the second year the course of study must cover two subjects but a student may spend more time on one than the other. In the third and final year of the degree programme, a student may spend all his time in one subject to acquire some degree of specialisation, or he may continue his study of two subjects towards a combined major degree.

Within this framework the department of statistics recommends the following combinations of subjects and courses to our undergraduates:

Year 1 : Statistics, Economics Mathematics

Statistics Computer Science Mathematics

Year 2 : Statistics, Economics

Statistics Mathematics

Statistics, Computer Science

Year 3 : Single subject major in Statistics or a combined major in Statistics and the other subject studied in Year 2.

The combinations recommended above are not the only area possible. Various other combinations are allowed.

The approximate amounts of teaching time devoted to Statistics in each year, and the proportion this forms of total teaching time are as follows:

Year 1 : 7 hours a week for 25 weeks = 175 hours (1/3 of total teaching time)

Year 2 : 7-10 hours a week for 25 weeks = 175-250 hours (1/3 to ½ of total teaching time

Year 3 : (i) Double major 6-9 hours a week for 25 week
= 150-225 hours
40-60% of total teaching time

(ii) Single major 15 hours a week for 25 weeks
= 300 hours
100% of total teaching time

Examinations

University examinations are held at the end of each year of the undergraduate programme. The award of a degree is based on the examinations at the end of the second and Third years and on class work and class tests given in these two years.

Admission Requirements

The minimum requirements for admission to degree courses at the University of Ghana are

Passes in five subjects at the General Certificate of Education (G.C.E.) or its equivalent of which three subjects must be passed at Advanced Level or its equivalent.

For Statistics, a pass in Mathematics of GCE Advanced Level or its equivalent, is desirable. A pass in Mathematics at ordinary level is required.

UNIVERSITY OF GHANA
DEPARTMENT OF STATISTICS

B.A. B.Sc. PROGRAMME IN STATISTICS

FIRST YEAR

| | Course | Pre-Requisite | Units |
|---|---|---|---|
| S100: | Elementary Statistical Methods | O-Level Mathematics | 12 |
| S101: | Introductory Probability | A-Level Mathematics | 12 |
| MS001: | Basic Algebra and Calculus | O-Level Mathematics | 12 |
| S102: | Practical | O-Level Mathematics | 4 |

Course Combinations

| | | | |
|---|---|---|---|
| Option A (pre-requisite A-Level Mathematics) | S100 | S101, S102 | 28 |
| Option B (Non-continuing) | S100, MS001, S103 | | 28 |

SECOND YEAR

| | Course | Pre-Requisite | Units |
|---|---|---|---|
| S200: | Statistical Methods | S100, S101/M101 | 12 |
| S201: | Probability Theory | S101/M101 | 12 |
| S202: | Sample Survey Methods | S100, S101 | 6 |
| S203: | Design of Experiments I | S100 | 6 |
| S204: | Practical | S100 | 4 |
| | | | 40 |

THIRD YEAR

| | Course | Pre-Requisite | Units |
|---|---|---|---|
| S300: | Statistical Inference | S201 | 14 |
| S301: | Applied Stochastic Processes | S201 | 14 |
| S302 | Sampling Theory | S202 | 7 |
| S303: | Design of Experiments II | S203 | 7 |
| S304: | Non-parametric Statistics | S200 | 7 |
| S305: | Regression Analysis | S200, M201 | 7 |
| S306: | Multivariate Methods | S200, S201, M201 | 7 |
| CS200: | Fortran | | 8 |
| CS204: | Statistical and Utility Packages | CS200 | 8 |
| S310: | Project | | 14 |

Course Combinations

(a) Single Subject: S300, S310 plus 42-45 units of other courses

(b) Double Major: (i) 28 or 30 units of courses (S300 to S306, CS200, CS204)

(ii) S310 or project in other subject

B. The M.Sc. Programme

ENTRY REQUIREMENTS

A good first degree and a good mathematical background. Normally a second class upper degree and at least two years of University mathematics are required but each application is considered on its merits.

PROGRAMME

The programme extends over two years and consists of courses of lectures with written examinations, participation in seminars and supervised individual projects involving practical data analysis or the study of some aspect of theoretical statistics. A dissertation must be submitted on the project.

COURSES

| | | |
|---|---|---|
| S400 : | Statistical Theory | (3 hours a week for 2 Terms |
| S401 : | Probability Theory | " |
| S402 : | Stochastic Processes | " |
| S403 : | Linear Statistical Models | " |
| S404 : | Non-Parametric Statistics | " |
| S405 : | Multivariate Analysis | " |
| S406 : | Analysis of Discrete Data | " |
| S407 : | Introduction to Biostatistics | " |
| S410 : | Seminars | (One 2-hour session a week) |

COURSE COMBINATIONS

First Year : S400, 401 and 402

Second Year : (i) Two courses selected with the approval of the dept.
(ii) S410 and Project

Each student is expected to give a presentation in S410 on the subject of his project.

EXAMINATIONS

First Year : Three 3-hour written papers
Second Year : Two 3-hour written papers and a dissertation on the project.

FRENCH-SPEAKING CENTRES

1. Country : Morocco

2. Name of centre : Institut National de Statistique et d'Economie Appliquée

3. Attached to : Secretariat of State for the Plan and Regional Development

4. Address : P.O. Box 406, Rabat (Morocco)
Tel. 709.15/23/26

5. Name of Director : Mustafa Benyaklef

6. Aim

The Institut National de Statistique et d'Economie Appliquee provides training for higher and middle-level cadres in statistics, applied economics and information sciences for future employment in the Administration, semi-public agencies and the private sector. INSEA accepts foreign students as well as Moroccan ones.

7. Background

INSEA was established initially as the Centre de formation des ingénieurs des travaux statistiques (CFITS) in December 1961 under the auspices of the Moroccan Government with the assistance of the United Nations Economic Commission for Africa. CFITS was changed into INSEA in April 1967 by royal decree.

8. Academic staff

The policy which was introduced over ten years ago to train Moroccan teachers continues to be applied actively. The teaching staff comprises:

- Full-time teachers : 35 (Moroccans)
- Part-time teachers 60
- Consultants 7 (expatriate)

The part-time teachers on average give three hours of classes per week or one third of the average for a full-time teacher. They are generally university members or statisticians who are already working. Moreover students following the ingénieurs statisticiens economistes course supervise practical work in other departments.

9. Courses

INSEA now offers five different courses:

(i) Information science:

- Adjoints techniques programmeurs (ATP)
- Ingénieurs analystes informaticiens (IAI)

(ii) Statistics:

- Ingénieurs statisticiens économistes (ISE)
- Ingénieurs d'application de la statistique (IAS)
- Adjoints techniques de la statistique (ATS)

There is also an actuary option in the IAS course.

9.1 Instruction

The instruction INSEA comprises official lectures, practical work, seminars, other lectures and research work.

There are some 22 class hours a week for all courses except ISE which has 12 so as to enable students to work on individual research which is essential at this level.

Students' knowledge is continually checked through their homework or examinations where the ratings are taken into consideration for advancement to the next class and for the award of diplomas.

9.2 Academic year

The academic year begins on 1 October and ends towards the end of July for studies which include periods of attachment or theses. It is divided into three terms of ten weeks each.

Students are given the university holidays established by the Ministry of National Education.

9.3 Courses

9.3.1 Adjoints techniques programmeurs (ATP)

(i) Duration of course one year

(ii) Admission requirements: admission is based on a competitive examination open to students who have duly completed the seventh year of secondary education in the mathematics, science or economics streams.

(iii) Number of places in 1981 : 30

(iv) Course content:

The course covers:

Computer science (general)

- introduction to computer science
- introduction to analysis
- operating systems
- indexing systems

Programming

- programming techniques
- Fortran
- Cobol

Subsidiary courses

- Mathematics
- Statistics
- Enterprise accounting and management
- English

9.3.2 *Ingénieurs analystes informaticiens (IAI)*

(i) *Duration of course: 3 years*

(ii) *Admission requirements: Admission is based on a competitive examiantion open to persons who have passed the baccalaureat in mathematics or economics.*

(iii) *Number of places in 1981: 63*

(iv) *Course content*

*The first year covers the following:*

- *Computer science: introduction, programming, computer science theory*
- *Subsidiary courses: mathematics, statistical probability, technical English*

*The second year covers:*

- *Computer science: Organic and functional analysis, numerical algorithms, structure of information, structure of computers, operating systems*
- *Subsidiary courses: use of packages, report writing, enterprise economics, accounting and management and technical English*

*The third year covers: Design analysis, data bases, programming language, four seminars to be chosen from a list which includes micro information science, installation of a computer centre etc.*

*Subsidiary courses: psychosociology, management, data analysis, linear programming and operations research.*

*Attachement: an attachment must take place in a computer centre for the entire third term and extending possibly after July or August a thesis must be written.*

(v) *Awards: Studies lead to the award of the diploma of ingenieur analyste*

9.3.3 *Ingénieurs d'application de la statistique*

(i) *Duration of course: 3 years*

(ii) *Admission requirements: Admission is based on a competitive exariantion open to students who have passed the baccalaureat in mathematics or science or hold a recognized equivalent diploma.*

(iii) *Number of places in 1981: 100*

(iv) *Course content.*

*First year*

*Basic courses: descriptive statistics, probability, algebra analysis and economics*

*Subsidiary courses: technical languages Arabic, English, French*

Secondyear

Basic courses: Mathematical statistics: micro economics, macro economics, mathematics, linear programming

Subsidiary courses: enterprise accounts and management, national accounts, computer science, numerical analysis, technical languages (Arabic, English)

At the end of the second year students are assigned to practical work for about one month during June - July.

Third year

Basic courses: mathematical statistics, econometrics, sampling, project analysis, input-output analysis, projection techniques, demography:

Subsidiary courses: planning techniques, public finance, administrative law, sociology, drafting techniques, statistical exercises: four to be chosen from a list which includes development economics, the statistician and the computer science user, economic and social statistics, etc.

Introduction to studies and research: four to six students participate in study groups of their choice which are led by research teachers (an average of two to three )for three hours a week and produce a report at the end of the year.

(v) Awards: Studies lead to the award of the diploma of ingénieur d'application de la statistique.

9.3.4 Ingénieurs statisticiens Economistes (ISE)

(i) Duration of course: 3 years

(ii) Admission requirements: Admission is based on a competitive examination open to candidates who have:

- Ingenieur d'application de la statistique
- a degree in economics or mathematics
- a recognized equivalent diploma with at least three years' professional experience

(iii) Number of places in 1981: 15

(iv) Course content:

The basic unit is the term. Students in the second year may choose between a statistics option and an economics option a demography option is under study. Within each option specialization is offered (for example economic analysis, planning, sampling)

*First year: basic courses for all students (statistics, microeconomics, macroeconomics, mathematics, econometrics.*

*Second year: depends on the option and specialization but includes common courses (project analysis, planning techniques) and specific courses (applied statistics public economics)*

*The third term of the second year is devoted to a dissertation.*

*(v) Studies lead to the diploma of statisticien economist (ISE)*

9.3.5 *Adjoint technique de la statistique (ATS)*

*(i) Duration of course: 2 years*

*(ii) Admission requirements: Admission is based on a competitive examination open to students who have completed the seventh year of secondary school in mathematics science or economics.*

*(iii) Number of places in 1981: 50*

*(iv) Course content:*

*First year*

*Basic courses: statistics, mathematics graphic representation demography*

*Subsidiary courses: information sciences, sociology, technical languages (Arabic, English, French)*

*At the end of this year during June - July studetns are involved in practical work for about one month.*

*Second year*

*Basic courses: statistics, computer science, sampling economic, geographical, administrative and economic conditions, applied statistics.*

*Subsidiary courses: enterprise accounting, technical languages (Arabic English, French)*

*(v) Awards: Studies leads to the diploma of adjoint technique de la statistique (ATS)*

*Admissions and passes in end of year examinations*

| Course | 1977-1978 | | 1978-1979 | | 1979-1980 | | 1980-1981 | |
|---|---|---|---|---|---|---|---|---|
| | Admissions | Passes | Admissions | Passes | Admissions | Passes | Admissions | Passes |
| ISE | 29[X] | 16 | 19[X] | 19 | 16[X] | 7[(2)] | 15 | ... |
| IAS | 178 | 102 | 198 | 131 | 184 | 118 | 181 | ... |
| ATS | 47 | 40 | 36 | 35 | 48 | 42 | 64 | ... |
| IA | 101 | 83 | 108 | 98 | 126 | 104 | 144 | ... |
| ATP | 21 | 17 | 27 | 21 | 21 | 16 | 18 | ... |

(1) ISE: Ingénieur statisticien economiste

IAS: Ingénieur d'application de la statistique

ATS: Adjoint technique de la statistique

IA : Ingénieur analyste

ATP: Adjoint technique programmeur

(2) Admitted in the second year. Theses in the second year are not defended at any precise time but throughout the academic year.

(X) Including external students.

1. Country : The Ivory Coast
2. Name of Centre : Ecole de statistique d'Abidjan
3. Attached to : Ministry of the Plan and Industry
4. Address : 08 B.P. 3 Abidjan 08
Telephone: 44-08-40
44-08-42
5. Name of Director : Francois Yattien Amiquet
6. Aim:

The Ecole de statistique d'Abidjan is an establishment which provides statistical training at both the higher and the middle levels. Its aim is to train ingénieurs des travaux statistiques, adjoints techniques de la stiatistique and agents techniques de la statistique for French-speaking African countries.

The ingénieurs des travaux statistiques will occupy responsible positions in the Administration or large enterprises dealing with the preparation dissemination and utilization of economic information which is collected and prepared by the agents techniques.

7. Background

The establishment was created in 1961 as a school of applied statistics attached to the department of statistics for the purpose of training technical staff. In 1963 the ingénieurs des travaux statistiques section as opened and the centre became the Ecole de statistique. The adjoints techniques section was opened in 1967. By a law of June 1969, the Ecole de statistique was converted into a public establishment of higher learning with legal status and financial autonomy. It is headed by a management advisory board composed of 8 members.

8. Academic staff

In the academic year 1980/81 the full-time academic staff consisted of four INSEE statisticians, an expert in demography, an economist, an information scientist and a physical education and sports teacher, a total of eight.

Ingénieurs statisticiens économistes are expected to be recruited for the academic year beginning in October 1982.

There are also 35 part-time teachers who provide some 4,000 course hours per year including a visiting INSEE teacher who provides in introduction to national accounts.

9. Courses

9.1 Ingenieurs des travaux statistiques

9.1.1 Duration of the course: Training in this section lasts for three or four years depending on whether students are admitted into the first year by direct competitive exam or into the preparatory year by direct competitive examination or professional competitive examination.

9.1.2 Level of admission: Applicants should have passed the baccalaureat preferably in the science stream. The level of the mathematics tests is that of the science and technical streams in the last classes in high school or college. Applicants may be admitted in the preparatory year on the basis of their qualifications after their files have been studied and as long as they hold a DUES or a recognized equivalent diploma.

9.1.3 Number of places in 1988: 15 in the first year
20 in the preparatory year

9.1.4 Use of time: Over the entire four years of training including the preparatory year the 2,335 classroom and practical hours are divided as follows by major subjects not counting the practical attachment at the end of the course:

| | |
|---|---|
| Mathematics | 15 per cent |
| Statistics and demography | 31 per cent |
| Economics | 28 per cent |
| Computer science | 10 per cent |
| Languages | 8 per cent |
| Miscellaneous and case studies | 8 per cent |

The main aim of the preparatory year is to bring students who do not come from the scientific stream in high schools to the required standard in mathematics (350 hours of classes and supervised work out of a total of 610 hours). They are also given an introduction to the three basic subjects taught at the school: Statistics and probability, economics and computer science. The language and contemporary civilization classes train students to collect documentation and present it orally or in the form of reports or summaries, to discuss it or read it in English and translate it.

In the first year students learn mathematical analysis and linear algebra which are required to tackle the mathematical statistics, economics and planning techniques programmes. Basic courses in statistical elaboration and analysis, probability and demographic analysis are given. Students begin general economics by studying factors and units of production, revenue and economic fluctuations and follow a course in economic accounts

In the second year the theoritical education continues with mathematical statistics, but the application of statistical methods to various economic fields takes an important place in the timetable (145 hours out of 240). Similarly the theoretical training in economic mechanisms is supplemented by a course on underdevelopment leading to a more practical

*In the third year students receive complementary basic education during the first term. At the same time either individually or in groups of two or three, they carry out a case study which makes them spend around 100 hours applying the knowledge they have learned at the school. The last six months are reserved exclusively for practical work aimed primarily at giving the students a more specific understanding of their future tasks and familiarizing them with practical difficulties and problems which they may encounter during their professional life. Moreover, a large part of the time in the third year is reserved for further specialization in the following four options: computer science, management, applied statistics and demography.*

*9.1.5 Assessment*

*Every week all students in the school are required to perform one or two exercises or sit a test; the ratings given for these will be taken into consideration with regard to promotion to higher classes and the award of diplomas.*

*Preparatory year*

| | | Indicative annual figure | |
|---|---|---|---|
| Subject | Co-efficient | Written examination | Oral examination |
| Algebra | 21 | 6 | 1 |
| Mathematical analysis | 27 | 6 | 1 |
| Numerical analysis and calculus | 8 | 2 | - |
| Descriptive analysis | 11 | 4 | 1 |
| Contemporary civilization | 12 | 4 | 1 |
| Economic geography | 6 | 2 | - |
| English | 6 | 1 | 1 |
| Physical education | (5) | - | - |
| General assessment | 9 | - | - |
| T o t a l | 100 | 25 | 5 |

*In the first and second years there are also five oral examinations during the year and 31 written examinations in the first year and 24 in the second year.*

It should be noted that:

1. The length of written tests is left to the discretion of the teacher but should fall within the range of one and a half to three and a half hours;

2. The general assessment which is made at all levels takes into account all the work done throughout the year, the industriousness and general beheavour of the student;

3. For physical education, only notes between 12 and 20 will be counted.

9.1.6 Awards

To be promoted to a higher class students must obtain a general average of at least 12 out of 20.

Apart from very exceptional cases such as long-term sickness repeats of the preparatory year are not allowed.

A panel may agree to students whose average is between 10 and 12 repeating.

The final ranking of students is based on the general total of marks obtained throughout the three years' courses.

Students who in each of their years of study have achieved a general average of at least 12 out of 20 are awarded the diploma of Ingénieur des travaux statistiques.

9.2 Adjoints techniques de la statistique

9.2.1 Duration of the course: Two years

9.2.2 Level of admission: Applicants must have attended one of the final classes in high schools or colleges.

9.2.3 Number of places in 1962: 25

9.2.4 Use of time: The over-all break-down of the 1,070 hours of classes and supervised work during the two years' course is as follows:

| | |
|---|---|
| Mathematics | 12 per cent |
| Statistics and demography | 43 per cent |
| Economics | 18 per cent |
| Computer science | 6 per cent |
| Miscellaneous | 21 per cent |

In the first year students also receive general education in mathematics and French. Descriptive statistics and economic account for 63 per cent of the time.

The second year is reserved for more practical training apart from 90 hours of statistical analysies and 50 hours of general economics. The other statistical courses are designed to inculcate the principles of applying statistics to various economic fields.

The last two months are reserved for practical work generally undertaken in the context of the school's activities (actual work, training in the field or processing of a statistical survey). It may, however also take place in the department of statistics or other statistical or technical services of the public or private sector.

9.2.5 Assessment

Students sit 28 written examinations and four oral examinations in the first year. An assessment is also made every week in the second year when there is an average of 18 written and three oral examinations.

The length of written examinations is left to the discretion of the teacher but should range from one and half to three and a half hours. A general assessment (co-efficient 9) is made of all the work done during the year, the industriousness and the general beheavour of the students.

9.2.6 Awards

The general average required to pass the different examinations at the end of the academic year is 12 out of 20. Only the examinors are empowered to take decisions on students repeating years.

Students who at the end of their studies have obtained a general average of at least 12 out of 20 are awarded the diploma of Adjoint technique.

9.3 Agents techniques

9.3.1 Duration of course: 1 year

9.3.2 Level of admission: Candidates should have entered the penultimate class in high schools or colleges.

9.3.3 Number of places in 1982: 25

9.3.4 Use of time: The total number of hours spent in the class room and on supervised work is around 550, broken down as follows:

| | |
|---|---|
| Statistics and demography | 42 per cent |
| Mathematics | 6 per cent |
| Economics | 6 per cent |
| Practical work | 11 per cent |
| Miscellaneous | 35 per cent |

| Subject | Number of hours: Classes | Number of hours: Supervised work |
|---|---|---|
| A. GENERAL EDUCATION | 80 | 40 |
| 1. Mathematics | 20 | 10 |
| 2. French | 40 | 20 |
| 3. Economic geography | 20 | 10 |
| B. STATISTICS | 145 | 130 |
| 4. Statistical method and calculation | 70 | 50 |
| 5. Statistical organization and preparation | 30 | 30 |
| 6. Price, labour and household budget statistics | 20 | 20 |
| 7. Demography | 15 | 20 |
| 8. Agricultural statistics | 10 | 10 |
| C. Miscellaneous | 15 | 50 |
| 9. Introductory economics and economic accounting | 15 | 15 |
| | - | 35 |
| | 240 | 220 |

For the practical work, which lasts one month at the end of the course, students participate as enumerators in a field operation organized by the administration of the school. During the work they are introduced in a concrete way to the various problems involved in the collection of statistical data in Africa.

9.3.5 Assessment

| Subject | Co-efficient | Average number per year: Writen examinations | Average number per year: Oral examinations |
|---|---|---|---|
| Mathematics | 5 | 1 | 1 |
| French | 10 | 2 | 1 |
| Economic geography | 5 | 1 | - |
| Statistical method and calculation | 20 | 6 | 1 |
| Statistical organization and preparation | 10 | 2 | - |
| Price, labour and household budget statistics | 7 | 2 | - |
| Demography | 8 | 2 | - |
| Agricultural statistics | 3 | 1 | - |
| Introductory economics and economic accounting | 7 | 1 | - |
| Physical education | (5) | - | - |
| Practical work | 16 | - | - |
| General assessment | 9 | - | - |

Note: In physical education only marks between 12 and 20 are counted.

9.3.6 Awards

Students who obtain a general average of at least 12 out of 20 are awarded the diploma of Agent technique.

The Board of Teachers may decide whether students whose general average is between 10 and 12 out of 20 may repeat.

10. Admission requirements

Admission to the Ecole de statistique d'Abidjan is open to all students who have submitted a full application form in due time and who are successful in the competitive exam or who are admitted by the admission panel on the basis of their qualifications.

There are two admission systems for each section:

-Direct competitive exam

-Professional competitive exam

The latter is reserved for candidates who have professional experience in the public or private sector.

The applicant's file should contain the following:

1. Application
2. Curculum vitae
3. Birth certificate
4. Copy of required diplomas or school certificates
5. Medical certificate
6. Stamps for the return of the file
7. A passport photo

The file should reach the school before 15 April.

The files of persons who are not nationals of the Ivory Coast should be transmitted through the Department of Statistics of the applicant's country of origin.

11. Tuition fees

The tuition fees are as follows for the various levels of training:

| | |
|---|---|
| Ingénieur des travaux statistiques: | 30,000 CFA francs per month |
| Adjoints techniques de la statistique | 25,000 " " " |
| Agents techniques | 25,000 " " " |

Payable over a period of nine months.

12. Fellowships

The school accepts only students with fellowships.

Fellowship applications are totally unrelated to students' admission applications or registration for the competitive entrance examinations.

The Government of the courtry of origin of the candidate may on its part grant a fellowship or submit a request to an aid agency such as UNDP, EEC, WHO, USAID, FAC or FAO. Around 90 per cent of the former students of ESA received fellowships from those agencies.

13. Living conditions for foreign students

Foreign students are accommodated at the Cité Universitaire in Abidjan. The cost of a room is 300 cfa francs per month and a meal ticket is 75 cfa francs.

Transport is provided by the school.

The major problem confronting the schools is that of permanent premises which would enable it to discharge its training functions properly. The project relating to the construction of the premises has been submitted to BSIE and EDF for financing out of the regional EDF funds.

14. Miscellaneous

The school shelters as from [illegible] regional and international seminars.

3 1. The calendar o[illegible] [illegible]ntegral surveys (July - August 1981).

Ecole de Statistique d'Abidjan

5. Number of diplomas by country and by section

| Country | Agent-Technique diploma | | | Adjoint Technique diploma | | | ISS diploma | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1977 1978 | 1978 1979 | 1979 1980 | 1977 1978 | 1978 1979 | 1979 1980 | 1977 1978 | 1978 1979 | 1979 1980 | 1977 1978 | 1978 1979 | 1979 1980 |
| Benin | - | - | - | - | - | - | 4 | 1 | 1 | 4 | 1 | 1 |
| Central African Republic | - | 1 | 1 | 1 | - | - | - | 1 | - | 1 | 2 | 1 |
| Chad | 2 | 1 | - | - | - | - | - | - | 1 | 2 | 1 | 1 |
| Congo | 3 | 4 | 8 | 1 | 1 | 2 | - | 1 | | 4 | 6 | 10 |
| Gabon | - | - | - | - | - | - | - | - | | - | - | - |
| Ivory Coast | 8 | 10 | 7 | 7 | 5 | 5 | 4 | 5 | 5 | 19 | 20 | 17 |
| Mali | - | 1 | - | 1 | - | 1 | - | 2 | 2 | 1 | 3 | 5 |
| Niger | 1 | - | - | - | - | - | - | - | - | 1 | - | - |
| Rwanda | 1 | 1 | 1 | - | - | 2 | 1 | - | - | 2 | 11 | 3 |
| Senegal | - | - | - | - | - | - | 1 | - | - | 1 | - | - |
| Togo | 4 | - | - | - | 2 | 6 | 1 | - | 2 | 5 | 2 | 7 |
| Upper Volta | - | - | 5 | - | - | 1 | - | 1 | - | - | 1 | 6 |
| Zaire | 1 | - | - | - | 1 | - | - | - | - | 1 | 1 | - |
| Total | 20 | 19 | 22 | 10 | 9 | 18 | 11 | 11 | 13 | 41 | 38 | 51 |

inistry of Planning and Industry

Ecole de statistique d'Abidjan

Number of students by country and by section 1980/81 academic year
Situation as of 10 November 1980

| Country | I T S | | | | | A D | | | A.T. | Total | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IT.3 | IT.2 | IT.1 | Preparatory | Total | AD.2 | AD.1 | Total | | 1981 | 1979/80 | 1979/80 |
| Benin | - | 2 | 1 | - | 3 | - | - | - | - | 3 | 2 | 2 |
| Central African Rep. | 1 | - | - | - | 1 | 1 | - | 1 | 1 | 3 | 5 | 4 |
| Chad | - | - | - | - | - | - | - | - | - | - | 2 | 1 |
| Congo | 1 | 1 | 3 | 2 | 7 | 3 | - | 3 | 3 | 13 | 14 | 12 |
| Gabon | - | - | - | - | - | - | - | - | 1 | 1 | - | - |
| Ivory Coast | 11 | 10 | 12 | 6 | 39 | 9 | 2 | 11 | 9 | 59 | 50 | 50 |
| Mali | 3 | - | 2 | - | 5 | 2 | - | 2 | - | 7 | 11 | 13 |
| Madagascar | - | - | 2 | - | 2 | - | - | - | - | 2 | - | - |
| Mauritania | - | - | 1 | 1 | 2 | | - | - | - | 2 | - | 1 |
| Rwanda | - | - | - | - | - | - | - | - | - | - | 3 | 3 |
| Senegal | - | - | - | 1 | 1 | - | - | - | | 1 | 1 | - |
| Togo | - | 1 | 2 | 1 | 4 | - | 4 | 4 | - | 8 | 9 | 10 |
| Upper Volta | 1 | 4 | - | 1 | 6 | 2 | 5 | 7 | 3 | 16 | 5 | 13 |
| Zaire | - | - | - | - | - | - | - | - | - | - | 1 | - |
| T o t a l | 17 | 18 | 23 | 12 | 70 | 17 | 11 | 28 | 16 | 114 | 102 | 124 |

1. Country : France

2. Name of Centre : Centre européen de formation des statisticiens économistes de pays en développement, Paris

3. Attached to : L'Ecole nationale de la statistique et de l'administration économique (ENSAE)

4. Address : 3 avenue Pierre Larousse
92240 - MALAKOFF, France
Téléphone: 540.10.07

5. Name of Director : Lamine DIOP

6. Aim

The aim of the Centre europeen de formation des statisticiens économistes des pays en developpement (CESD-Paris) is to train high-level statistical cadres who in their countries will develop, manage and use statistical information for economic or social decision making at the national, regional or enterprise level. CESD also assists African statistical schools by organizing a common admission examination and sending teachers.

7. Background

CESD is a private association governed by the French law of 1 July 1901. It was founded in October 1962 by the Director General of the Statistical Office of the European Communities, the Director General of the General Department for Overseas Development of the Commission of the European Economic Communities, the Director General of the Statistical Institutes of countries members of EEC, the Director of Cultural and Technical Co-operation of the French Ministry of Co-operation and the Director of the Ecole nationale de la statistique et de l'administration économique of France.

The association is managed by a Governing Council composed mainly of European members.

8. Acadamic staff

CESD operates in close colaboration with ENSAE. Around 70 per cent of the courses are common to the two schools and are provided by teachers from ENSAE. For specific subjects (around 30 per cent) the Centre calls on visiting teachers (a total of 15 for 480 hours or so) with experience in the problems and specific characteristics of the economies of developing countries. The acadamic staff of ENSAE consists of 12 permanent and 300 part-time teachers.

9. CESD prepare students for the diploma of ingénieur statisticien economiste which is awarded at the end of a high-level theoretical course.

9.1 Duration of course: The course lasts for three years

9.2 Level of admission: The competitive entrance examination is open to students who have already several years of higher education (on average four) in mathematics or economics.

9.3 Number of places in 1980 : 30

9.4 Syllabus : Since students come from two different back grounds, the first year of the course contains an economics option and mathematics option. The economics option is intended for students who have training in economics and the mathematics option for students with a scientific background. The aim of the training in the first year (economics option or mathematics option) is twofold:

Firstly to give students from the two backgrounds the suplementary training they require to follow common classes for the rest of the course and secondly, to give students an introduction to the basic subjects taught at the Centre.

First year : Economics option

Economics

- Mathematics
- Statistics and probability
- Economics
- Computer science
- Languages

The mathematics syllabus consists of certain subjects which are covered in the analysis syllabus in the special mathematics class.

First year : Mathematics option

- Mathematics
- Statistics and probability
- Economics
- Enterprise accounting
- Computer science
- Languages

The introduction to economics consists of a presentation of the main economic facts and institutions and a brief expose of analytical tools as well as lectures with commentaries on the economic and statistical problems of developing countries.

Between the first and second year, first year students are obliged to carry out an attachment in an enterprise or administration of a developing country. In principle this attachment takes place during the months of July, August and September prior to the second year and lasts for about 10 weeks.

Second year

There are three groups of students in the second year. The first two groups are students in the economics and mathematical options from the first year. The second group comprises students admitted directly in to the second year.

| Course | Number of hours | Economics option | Mathematics option | Direct |
|---|---|---|---|---|
| Mathematics & Statistics | | | | |
| Algorithms | 20 | x | x | x |
| Mathematical statistics | 115 | x | x | x |
| Applied statistics | 15 | x | x | x |
| Economics | | | | |
| Economic theory | 115 | x | x | x |
| Growth models in developing countries | 30 | x | x | x |
| World economic system | 40 | x | x | x |
| National accounts | 40 | x | x | x |
| Public finance & budget | 15 | x | x | x |
| Other courses | | | | |
| Demography | 30 | x | x | x |
| Development statistics | 25 | x | x | x |
| Introduction to enterprise accounting | 20 | | | x |
| Introduction to computer science | 20 | | | x |
| Languages | 70 | x | x | x |

Note: An x in the column means that the course is obligatory for the group of students in question.

The economic theory course covers micro and macro economic theory.

The mathematical statistics course covers statistical decision making, estimates, hypothese testing, linear modeling and variance analysis.

*Third year*

*The third year consists of a common block of subjects and options.*

A. *Common block*

*Data analysis*
*Econometrics*
*Sampling theory*
*Project evaluation theory*
*Project selection*
*Planning*
*Economics and international institutions*
*Survey processing techniques*
*Stablisation and growth in developing countries*

B. *Optional subjects*

*Major in mathematics or statistical theory*
*Major in economics*
*Major in statistical practice*
*Major in enterprise economics*

C. *Group work*

*The common block of subjects is obligatory. Each student in addition selects a certain number of optional subjects from the various majors and may participate in group work.*

*Group work consists of studying one of the technical subjects offered at the Centre dealing with the economy of the third world. The studies are undertaken by groups of three to four students under the direction of a teacher who acts merely as guide and advisor.*

*During the third year students frequently use the computers in the computer centre for the applied work.*

*9.5 Awards*

*At the end of each course lasting three months or six months, a written or oral examination is organized. For courses lasting one year, students sit two or three partial exams.*

*The average required to advance to a higher class or obtain a diploma is 12 out of 20.*

*Students are allowed to repeat a year only once during the course.*

*9.6 Academic year*

*School year begins early in October and ends on 30 June. An obligatory period of practical work of a minimum of 10 weeks is scheduled between the first and second years. Whenever financing is available, the practical work should be conducted on the African continent.*

First year students should arrive 15 days before courses begin.

10. Admission requirements

10.1 By diploma

The following students may be admitted by diploma in the first year (mathematics option):

- Holders of a Masters Degree in mathematics
- Holders of a diploma from a higher science school

The following students may be admitted by diploma in the first year (economics option).

- Holders of a Masters Degree in economics who have also passed a mathematics test designed to check the level of mathematics

The following students may be admitted directly by diploma in the second year:

- Holders of a Masters Degree in mathematics or a diploma from a higher science school who also have a sound background in economics, calculus and the theory of probability.

10.2 By competitive examination

(a) The following may sit the competitive exam for admission to the Ingenieur statisticien économiste (ISE) course, mathematics option:

Students who have registered in a special mathematics class or Students who have registered in the second year of a first degree course in mathematics at a university.

Applicants for the economics option should have registered in the fourth year of an economics faculty.

(b) Holders of the diploma of Ingénieur des travaux statistiques can also sit the ISE competitive exam in either the mathematics or the economics option.

10.3 Registration

Persons wishing to be admitted by diploma or by one of the CESD competitive examinations should fill out a registration form which is available from the local statistical service or the secretariat of CESD for applicants residing in Europe.

The form should be returned to the local statistical service by 20 March at the latest. All forms should reach the CESD secretariat at Malakoff before 1 April 1982.

Applications for admission by diploma can be accepted upto 1 June inclusive, which is the cut-off date.

10.4 Examination results

The competitive examinations for admission take place in the first half of May. The examination will be held in the capital of each of the countries concerned. There is also an examination centre at Malakoff.

The Panel which rules on admissions by diploma and by examination will meet by 30 June at the latest. Successful candidates are informed by letter by 10 July at the latest.

11. Tuition fees

The tuition fees are 6,000 French francs per year.

12. Fellowships

Admission to CESD does not automatically guarantee a fellowship and CESD can also accept students who do not have fellowship.

It is however up to the candidates, in conjunction with department of statistics or the ministry of foreign affairs, of the civil service or of national education in their countries to fill out an application for a fellowship.

The Government in the candidate's country of origin may itself award a fellowship or submit the request to an aid agency.

Students admitted to CESD should preferably have a fellowship from EDS, FAC or the United Nations because the amount of some national fellowship is not sufficient to enable students to be trained satisfactorily and in particular to finance the practical work in Africa scheduled during the course.

13. Living conditions

CESD holds 20 rooms at the Cité Universitaire and allocates them as a matter of priority to first-year students whose resources are less than 800 francs per month. A few places have also been obtained in the lodgings of the Ministries of the Economy and the Budget.

CESD

*Number of registrations and passes in end of year examinations*

| | June 1977 | June 1978 | June 1979 | June 1980 | June 1981 |
|---|---|---|---|---|---|
| *Third year* | | | | | |
| *Registrations* | 23 | 10 | 15 | 20 | 20 |
| *Passes* | 23 | 10 | 15 | 20 | - |
| *Second year* | | | | | |
| *Registrations* | 11 | 16 | 21 | 22 | 23 |
| *Passes* | 10 | 15 | 20 | 20 | - |
| *First year* | | | | | |
| *Registrations* | 21 | 21 | 26 | 25 | 19 |
| *Passes* | 16 | 20 | 21 | 21 | - |

1. Country : United Republic of Cameroon

2. Name of Centre : Institut de statistique de planification et d'économie appliquée (ISPEA)

3. Attached to : Ministry of the Economy and Planning

4. Address : P.O. Box 294, Yaounde
Cable address : CIFS-YAOUNDE
Telephone : 22-01-34
22-37-25

5. Name of Director : Paul Ngogang

6. Aim:

The Institut de statistique de planification et d'économie appliquée is intended for students who have received a diploma at the end of their secondary studies and are to join the middle- and higher-level cadres of the body of statisticians which user countries need to produce the statistics required for their economic and social development.

7. Background

The idea of opening a statistical training centre at Yaoundé arose from the first Conference of African Statisticians which was held at Addis Ababa, Ethiopia, in September 1959. The Centre, which was set up in November 1961 under the auspices of the Economic Commission for Africa and the Cameroonian Government for the countries of Central Africa was known as the Centre international de formation statistique de Yaounde (CIFS).

In January 1969 the Governing Council of the United Nations Development Programme (UNDP) approved a project relating to the establishment of a statistical training institute with a view to developing the old centre which had come to cover all interested French-speaking countries.

The statistical training institute became the Institut de statistique, de planification et d'économie appliquée (INSEA) pursuant to a decree by the President of the Republic in 1976.

8. Academic staff

ISPEA has a core of 12 permanent teachers, most of whom are Cameroonian, 36 part time teachers and two consultants per year sent by INSEE and CESD. The Cameroonian teachers are statistical ingénieurs who are well experienced and qualified in their fields (mathematics applied statistics, statistical practice). Assistants help with other basic subjects and particularly statistical methods and economics.

The part time staff, both Cameroonian and expatriate, are high-level officials or teachers at the University or other institutes of higher learning in Yaoundé. They give certain courses in applied economics and various other subjects.

9. Courses

ISPEA offers three courses:

9.1 Agents techniques de la statistique

9.1.1 Duration of the course : 9 months

9.1.2 Level of admission: Holders of the BEPC diploma (four years of secondary education).

9.1.3 Number of places in 1981 : 25

9.1.4 Use of time: Instruction consists an average of 600 hours of theoretical classes and supervised work in addition to 125 hours of tests and a four-week period of practical work at the end of the course:

| | |
|---|---|
| - Statistics: | 130 hours |
| - Mathematics: | 130 hours |
| - Economics: | 30 hours |
| - Economic geography: | 35 hours |
| - French: | 30 hours |
| - Demography: | 30 hours |
| - English: | 30 hours |
| - Statistical practice: | 125 hours |
| - Miscellaneous: | 40 hours |
| Total : | 580 hours |

9.1.5 Assessment: Knowledge tested by weekly essays and quarterly examinations. All the marks obtained during the academic year are taken into consideration for the final results. Regular students must obtain a general average of at least 12 out of 20 to obtain the final diploma.

9.2.6 Academic year:

| | |
|---|---|
| Starts: | 1 October |
| Vacations: | 2 weeks in December<br>2 weeks in March |
| Practical work: | 10 April to 10 May |
| Ends: | 30 June |

9.2 Adjoints techniques de la statistiques

9.2.1 Duration of course: 2 years

9.2.2 Level of admission: Holders of the preliminary baccalaureat

9.2.3 Number of places in 1981: 25

9.2.4 Use of time: The instruction offered to adjoints techniques consists of 650 hours of classes and supervised work and 140 hours of assessment in the first year. Those who are admitted to the second year receive 500 hours of theoretical classes and supervised work and 125 hours of assessment. During the entire course three months of practical work are required: one month in the first and two in the second.

Note will be taken of the importance attached to assessment: almost one hour out of four of classroom or supervised work.

The breakdown of the timetable is as follows by subject or group of subjects:

| | |
|---|---|
| - Statistical methods: | 25 per cent |
| - Applied statistics | 26 per cent |
| - Mathematics | 22 per cent |
| - Economics, economic geography, enterprise accounting | 14 per cent |
| - Others | 13 per cent |

9.2.5 Assessment

Knowledge is checked by weekly essays and quarterly examinations. All the marks obtained during the academic year are taken into consideration in determining students' results either for admission in a higher class or for the final diploma.

Regular students must obtain a general average of at least 12 out of 20.

9.2.6 Academic year

First year

| | |
|---|---|
| Starts | 1 October |
| Ends: | 29 June |
| Vacations: | 2 weeks in March<br>2 weeks in December |

Actual length of course: 32 weeks

Long holidays: 1 July to 31 August

Practical work: 1 month from 1 to 30 September

Second year

Starts: 1 October
Ends: 30 June
Vacations: 2 weeks in December
2 weeks in March
Actual length of course: 28 weeks
End of course: 10 April
Practical work: 2 month (April/May)
Examinations: 10-15 June

9.3 Ingénieurs d'application de la statistique

9.3.1 Duration of course: 3 years

9.3.2 Level of admission: Holders of series C baccalaureat

9.3.3 Number of places in 1981: 30

9.3.4 Use of time: Instruction consists of a common block lasting two years in which fundamental subjects are taught. The third year's programme contains two options relating to statistics and applied economics.

First year

| Subject | Number of classroom and practical hours | | |
|---|---|---|---|
| | Classroom | Practical work | Total |
| Mathematics | 90 | 50 | 140 |
| Descriptive statistics | 60 | 40 | 100 |
| Numerical calculus | 20 | 16 | 36 |
| Introduction to probability | 30 | 18 | 48 |
| Descriptive economics | 100 | 40 | 140 |
| Computer sciences | 12 | 8 | 20 |
| Other subjects | | | |
| Enterprise accounting and management | 30 | 24 | 54 |
| Economic geography | 40 | 12 | 52 |
| Drafting techniques | - | 32 | 32 |
| English | 46 | 16 | 62 |
| Practical work (1 month) | | | |
| T o t a l | 428 | 256 | 684 |

Second year

| Subject | Number of classroom and Practical hours | | |
|---|---|---|---|
| | Classroom | Practical work | Total |
| Economic mathematics | 60 | 40 | 100 |
| Mathematical probability and statistics | 50 | 40 | 90 |
| Sampling theory and practice | 30 | 15 | 45 |
| Micro-economics | 24 | 8 | 32 |
| Macro-economics and growth | 24 | 8 | 32 |
| Enterprise economics | 16 | - | 16 |
| Economic exposes | - | 24 | 24 |
| National accounting | 24 | 8 | 32 |
| Planning | 24 | - | 24 |
| Introduction to econometrics | 20 | 10 | 30 |
| General demography | 20 | 12 | 32 |
| Price statistics | 10 | 6 | 16 |
| Budget and consumer surveys | 10 | 6 | 16 |
| Foreign trade statistics | 10 | 6 | 16 |
| Computer sciences | 18 | 14 | 32 |
| Case studies | - | 24 | 24 |
| Seminars | - | 16 | 16 |
| Other subjects | | | |
| Operational analytical accounting | 16 | 12 | 28 |
| Organization of a statistical service | 8 | - | 8 |
| Documentation and publications | - | 16 | 16 |
| English | 34 | 12 | 46 |
| Practical work: 2 months | | | |
| Total | 398 | 277 | 675 |

*Third year*

| Statistical option | | Economics option | |
|---|---|---|---|
| Subject | No. of classroom & Practical hours | Subject | No. of classroom & practical hours |
| Data analysis | 40 | Economic analysis | 40 |
| Mathematical statistics | 40 | Development statistics | 24 |
| Sampling theory and practice | 64 | Planning system and case study | 20 |
| Indices theory | 12 | Planning techniques | 16 |
| Case study | 40 | Project analysis and evaluation and case studies | 32 |
| | | Sectoral planning case | 16 |
| | | Plan analysis | 16 |
| | | Planning organization | 16 |
| | | Essays and homeworks | 24 |
| | | Applied econometrics | 20 |
| Total | 212 | Total | 234 |

| Subjects common to the two options | No. of classroom and practical hours |
|---|---|
| National accounting | 32 |
| Economic surveys | 32 |
| Agricultural statistics | 20 |
| Industrial statistics | 20 |
| Transport statistics | 16 |
| Labour statistics | 16 |
| Educational statistics | 10 |
| Health statistics | 10 |
| Computer science | 32 |
| Sociology and psychology of development | 48 |
| Seminars | 26 |
| English | 46 |
| Total | 306 |

*Practical work: 3 months*

9.3.4 Teaching methods and assessment procedures

The teaching methods are based on the following four objectives:

1. To make the students capable of dealing with all kinds of problems which the statistician meets;

2. To give him special training in the field where he is most gifted or for which he demonstrates the most interest;

3. To develop in him imagination, judgement and capacity for analysis and synthesis;

4. To make him able to communicate and convince others.

The pedagogical methods used to allow these objectives are based on:

1. Team work, homework, exposes-discussions, personal research work, case studies, field demonstrations, seminars, preparation of final dissertation, observation and professional work in the field.

2. Assessment is of a continuous nature and includes tests or oral questioning and evaluation of the students' work during the year for which specific marks are given.

3. In addition to the examination results, a general appreciation is made of each student. This covers the laboratory work, work in the field, work during the field attachment and the value of reports provided, as well as taking into account the behaviour and industriousness of each student.

9.3.5 Awards

(a) To advance to a higher class at the end of the school year students must obtain an average mark of 12 out of 20 or higher.

(b) Students who have obtained a mark lower than 12 out of 20 will, according to the mark they have received, be:

- Excluded from the Institute;
- Allowed to repeat;
- Required to resit their examinations.

According to the results of the resit examinations students will be:

- Allowed to advance to the higher class;
- Allowed to repeat;
- Excluded from the Institute.

A student may repeat only once during the entire course.

Graduating students will rank according to their general average over the three years' course. Students who have obtained a general average equal to at least 12 out of 20 will be awarded the diploma of Ingénieur d'application de la statistique.

9.3.6 School year

First year

| | |
|---|---|
| Starts: | 1 October |
| Ends: | 30 June |
| Vacations | 2 weeks in September<br>2 weeks in March |
| Actual length of course: | 32 weeks |
| Examination results: | 1 week in August |
| Resit examination: | 15 to 30 September |
| Long holidays: | 2 months from 1 August to 30 September |
| Field work: | 1 month from 1 to 30 July |

Second year

| | |
|---|---|
| Starts: | 1 November |
| Ends: | 30 June |
| Vacations: | 2 weeks in December<br>2 weeks in March |
| Actual length of course: | 32 weeks |
| Examinations results: | first week in September |
| Resit examinations: | 15 to 30 October |
| Field work: | 3 months from 1 July to 30 September |
| Examination results: | first week in October |
| Resit examination: | from 15 to 30 October |

10. Admission requirements

Admission to the various courses at ISPEA is competitive examination. The following may apply to sit the entry exam for the various courses:

(i) Ingénieurs d'application de la statistique:

Candidates holding the second level series C (Mathematics) baccalaureat

(ii) Adjoints techniques de la statistique.

Candidates should hold the prelinary baccalaureat;

(iii) Agents techniques de la statistique

Candidates should hold the BEPC (four years of secondary education)

Candidates who wish to sit any of the examinations should fill out an application file which is available at the local statistical service. The file will include the following:

- Application
- Birth certificate
- Copy of the requisite diploma
- Certificate of nationality
- Medical certificate

The file should reach ISPEA before 15 April. Foreigners' files should be transmitted through the statistical department of the country of which the applicant is a national.

Applicants for the ingenieur d'application de la statistique course who are still in the last class of high school may sit the examination subject to their obtaining the baccalaureat.

The competititive examination is held in the first half of May. It is held in the capitals of all countries concerned under the responsibility of the local department of statistics.

The competitive examination for the ingénieurs is the same at the Abidjan and Kigali centres. The examination panel meets on 30 June at the latest under the auspices of CESD in Paris.

The results of the competitive entrance examinations are generally announced during the second half of July.

11. Tuition fees

Tuition fees are as follows:

| | |
|---|---|
| Ingenieurs d'application: | 360,000 CFA francs per year |
| Adjoints techniques: | 300,000 CFA francs per year |
| Agents techniques: | 180,000 CFA francs per year |

12. Fellowships

ISPEA accepts only those students who have fellowships. However, admission to the Institute does not automatically imply that a fellowship will be granted.

The following institutions and agencies generally bear the costs of students at the Institute as long as they are requested to do so early enough by the user Government:

- United Nations Development Programme (UNDP)
- Commission of the European Communities (CEC)
- World Health Organization (WHO)
- Food and Agriculture Organization of the United Nations (FAO)

Requests for fellowships are absolutely independent of applications to sit the competitive examinations.

A growing number of students are paid for by their Governments. It is essential that they should complete all the administrative formalities before being sent to Yaounde so as to facilitate payment of their allowances.

13. Living conditions for foreigners

The Government facilitates entry into and stay in the United Republic of Cameroon for all foreign students who are admitted to participate in the activities of the Institute.

Medical care and hospitalization for students at ISPEA will be provided on the terms set out in the regulations in force in the United Republic of Cameroon.

Transport is provided for students by the Institute. There are lodging facilities (a total of 60 rooms).

Building will start on the new premises of the Institute in the very near future. The premises will inter alia comprise 15 classrooms with the total capacity of 500 places, an amphiteatre with 300 seats, 32 offices, a teachers' room, a reproduction room, a library and a cafeteria.

14. Miscellaneous

ISPEA from time to time hosts international seminars:

- Seminar on the Revised System of National Accounts (1975)
- Seminar on Household Surveys (1980)

1979-1980 End of year results by course and by country of origin

| Country/Section | Ingénieur d'Application Statistique | | | Adjoints Techniques | | Agents Techniques |
|---|---|---|---|---|---|---|
| | Diplomas | Admitted to third year | Admitted to second year | Diplomas | Admitted to second year | Diplomas |
| Benin | - | - | - | 1 | 2 | 2 |
| Burundi | - | - | - | 1 | - | 1 |
| Central African Republic | - | - | - | 1 | 1 | 1 |
| Chad | - | - | - | 1 | 1 | 2 |
| Comoros | - | - | 1 | - | - | - |
| Congo | - | 1 | 4 | 2 | 2 | 4 |
| Gabon | - | - | - | - | - | 1 |
| Guinea | - | - | - | 1 | - | - |
| Mali | 4 | 2 | - | 1 | 2 | - |
| Niger | - | - | - | - | - | 1 |
| Senegal | - | - | 1 | - | - | - |
| Togo | - | - | - | - | 3 | - |
| United Republic of Cameroon | 15 | 19 | 15 | 11 | 13 | 8 |
| Zaire | - | 1 | - | - | - | - |
| T o t a l | 19 | 23 | 21 | 19 | 24 | 20 |

Total number of students by course 1980/1981

| | |
|---|---|
| Ingénieurs d'Application Statistique | 61 |
| Adjoints Techniques | 37 |
| Agents Techniques | 29 |

1. Country : Rwanda

2. Name of Centre : Institut Africain et Mauricien de Statistique et d'Economie Appliquee (IAMSEA)

3. Attached to : Ministry of Planning

4. Address : P.O. Box 1109, Kigali (Rwanda)

5. Name of Director : Benoit NTIGURLIWA

6. Aim

The aim of the Institute is to train ingenieurs des travaux statistiques who are nationals of the States members of OCAM. However, it also accepts students from French-speaking non-member States.

7. Background

The Institut africain et mauricien de statistique et d'économie appliquee was founded in November 1976 in pursuance of resolution No. 44/AEFT/Bangui/74 adopted by the summit of Heads of State and Government of the African and Mauritian Common Organization (OCAM) concerning the transfer to Kigali, Rwanda, of the training of ingénieurs des travaus statistiques which was then offered at the Centre européen de formation des statisticiens economistes des pays en developpement (CESD) in Paris.

IAMSEA is thus one of OCAM's common undertakings which is administered by a governing council composed of:

1. The Ministers of member States or their representatives, with each State having one vote

2. The Secretary General of OCAM or his representative in an advisory capacity

3. One representative of the teaching staff

4. One representative of the students

8. Acadamic staff

The French Government, through its Fonds d'aide et de cooperation, and the European Development Fund finance full-time teaching posts and visiting lecturers. All in all IAMSEA has seven permanent teachers and three research workers. In addition there are part-time teachers and visiting lecturers who provide a total of 570 class hours excluding the photo-interpretation mission which can not be quantified in terms of hours.

9. Courses

9.1 Duration of the course three years

9.2 Admission requirements: Admission is exclusively by competitive examination which is the same as for the Yaounde and Abidjan centres. The competitive examination is open to candidates who have the series C (mathematics) baccalaureat and those who are in the first or second years of science faculties (economics or mathematics). Candidates in the last year of preparation for the series C baccalaureat may sit the entrance examination but admission is subject to their obtaining the series C baccalaureat by the time classes start at the Institute.

Since the 1978-79 academic year a preparatory year has been introduced. Admission to the preparatory year is based on the ITS competitive examination with priority being given to candidates from countries which have few statisticians and candidates who are adjoints techniques.

9.3 Number of places in 1981: 30

9.4 Syllabus (Use of time)

Preparatory year

| | |
|---|---|
| Mathematics | 200 hours |
| Exposes | 20 hours |
| Study of economic and social texts | 100 hours |
| English | 50 hours |
| Statistics and probability | 120 hours |

First year

| | | |
|---|---|---|
| (a) | Economics | |
| | Introduction to economics | 60 hours |
| | History of economics | 20 hours |
| | Economic expose | 30 hours |
| | Introduction to enterprise accounting | 40 hours |
| | Management and financial analysis | 30 hours |
| | National accounts | 40 hours |
| (b) | Mathematics | |
| | Mathematics | 180 hours |
| | Probability | 90 hours |
| (c) | Statistics and practice | |
| | Descriptive statistics | 90 hours |
| | Statistical practice and survey preparation | 30 hours |
| | Computer science | 30 hours |

Second year

| | | |
|---|---|---|
| (a) | Economics | |
| | Economic analysis | 70 hours |
| | International monetary economics | 30 hours |
| | Advanced national accounts | 50 hours |
| | Economics and history of development | 40 hours |
| | Public finance | 20 hours |
| (b) | Mathematics | |
| | Mathematics | 50 hours |
| | Probability and Mathematical statistics | 110 hours |
| | Operational research | 30 hours |
| | Sampling theory and practice | 30 hours |
| (c) | Statistics and practice | |
| | Collection, processing and analysis methods | 40 hours |
| | Survey preparation | 50 hours |
| | Computer science | 30 hours |
| | Demographic analysis | 30 hours |
| | Descriptive statistics | 30 hours |

Third year

| | |
|---|---|
| Planning | 30 hours |
| Study of projects | 40 hours |
| Demographic surveys | 10 hours |
| Data analysis | 20 hours |
| Econometrics | 20 hours |
| Computer science | 30 hours |
| Socio-economic household surveys | 20 hours |
| Organization of a statistical service and administrative management | 10 hours |

There are in addition 70 hours of case studies on agricultural statistics, health statistics, educational statistics, employment statistics, foreign trade statistics and industrial statistics.

Six months field work is expected at the end of the course from January to May.

10. Tuition fees

The tuition fees are set at 200,000 CFA francs per student per year.

11. Fellowships

Students at IAMSEA generally receive fellowships from EDF or FAC. Applications for fellowships from these agencies are usually sent through the normal channels by the relevant authorities of the candidate's country of origin. Some students have national fellowships from their countries but the amount of such national fellowships varies from country to country.

12. Living conditions for foreigners

For the time being IAMSEA is located in the premises of the former official college of Kigali which comprises a dormitory with 72 rooms, a canteen and an entertainment room. Students have a bus in which they travel as a group. Since 1981 there has also been a social and sports club (GAS) at IAMSEA which looks after the extracurricula aspects of the Institute from the socio-cultural and sports points of view.

Table 1 Distribution of students by year and by country for the accadamic year 1980-81

| Country/year | 3rd year | 2nd year | 1st year | Preparatory year | Total |
|---|---|---|---|---|---|
| 1. OCAM countries | | | | | |
| Benin | 3 | 4 | 1 | - | 8 |
| Central African Republic | 1 | - | 1 | - | 2 |
| Niger | - | - | 1 | - | 2 |
| Rwanda | 3 | 8 | 7 | 2 | 20 |
| Senegal | - | 3 | - | 5 | 8 |
| Togo | 2 | 3 | 5 | - | 10 |
| Upper Volta | - | -- | 4 | - | 4 |
| 2. Other countries | | | | | |
| Burundi | 2 | - | - | - | 2 |
| Chad | 1 | - | - | - | - |
| Congo | 7 | 2 | - | 1 | 10 |
| Gabon | - | - | - | 1 | 1 |
| Madagascar | - | - | 2 | - | 2 |
| Mali | 6 | - | - | - | 6 |
| T o t a l | 25 | 19 | 23 | 9 | 75 |

Table 2 Expected distribution by country of origin of ITS graduates from IAMSEA upto 1983

| Country | ITS year of graduation | 1979 | 1980 | 1981 | 1982 | 1983 | Total |
|---|---|---|---|---|---|---|---|
| (a) OCAM countries | | | | | | | |
| Benin | | 6 | 4 | 3 | 4 | 1 | 18 |
| Central African Republic | | - | - | 1 | - | 1 | 2 |
| Mauritius | | 3 | 2 | - | - | - | 5 |
| Niger | | - | - | - | - | 1 | 1 |
| Rwanda | | 1 | 7 | 3 | 8 | 7 | 26 |
| Senegal | | - | - | - | 2 | 2 | 3 |
| Togo | | 6 | 5 | 2 | 3 | 5 | 21 |
| Upper Volta | | 2 | 2 | - | - | 4 | 8 |
| (b) Other countries | | | | | | | |
| Burundi | | - | 1 | 2 | - | - | 3 |
| Chad | | 1 | 1 | 1 | - | - | 3 |
| Congo | | - | - | 7 | 2 | - | 9 |
| Gabon | | - | 1 | - | - | - | 1 |
| Madagascar | | - | - | - | - | 2 | 2 |
| Mali | | - | 1 | 6 | - | - | 7 |
| T o t a l | | 19 | 24 | 25 | 19 | 22 | 109 |

1. Country : Algeria

2. Name of Centre : Institut des techniques de planification et d'économie appliquée (ITPEA)

3. Attached to : Ministry of Economic and Physical Planning

4. Address : 11, Chemin Doudou Mokhtar (formerly chemin de la Touche) BEN AKNOUN, EL DJAZAIR

Téléphone 78-41-33
78-41-39

5. Name of Director : Bennoune MAHFOUD

6. Aim:

The Institut des techniques de planification et d'économie appliquée (ITPEA) is an institute of higher education. Its aim is to train cadres for the planning section Ingénieurs d'Application des Statistiques and economic analysts at grade XIII in the Algerian Civil Service.

These cadres are to serve not only in the Ministry of Economic and Physical Planning but also in other national institutions, central ministries and national enterprises.

Moreover, ITPEA contributes to the development efforts of sister and friendly countries by accepting the students of various nationalities put forward by their Governments as well as by international organizations such as UNDP.

7. Background

The Institute was established by decree of 20 July 1970 within the framework of an extensive programme implemented in context of the first five-year plan.

Technological institutes were intended to provide rapid training for qualified manpower at various levels so as to meet the economic and social development requirements of the country.

8. Academic staff

The academic staff of ITPEA is composed of 37 permanent teachers, eight part-time teachers and 12 associate teachers. The teaching staff are generally of Algerian nationality (86.16 per cent) and hold a third-level diploma (Higher studies, Masters, third level or State doctorate, professor).

9. Courses

9.1 Organization of studies

(a) Duration: The course lasts for eight weeks

- 4 terms of common studies (first and second years)
- 3 terms of specialized studies in the third year and the first term of the fourth year
- 1 term of practical work at the end (second term of the fourth year).

(b) Common studies

During this period the student is given basic training in order to acquire the fundamental concepts required to analyse economic problems as well as the mathematical and statistical tools required for quantification.

(c) Options

At the end of the common studies depending on their results, students enter one of two streams:

- Economic analyses
- Statistics

For the two streams there are common units and specialized units.

9.2 Admission requirements

Algerian students in the last year of secondary education in the mathematics, science, economic and accounting streams or who hold a recognized equivalent diploma, are admitted into the first year by competitive examination.

It is possible for students who have completed four terms of an economic degree to be admitted into the third year, subject to a review of their file.

The competitive examination is held each year in the month of September. Information on the date and arrangements for the examination are published the press two months before it is held. A ministerial decree which is published in the official journal establishes the number of applicants per year which is generally 120.

The examination covers

- Two general knowledge questions on social phenomena in the national language and in French.
- A mathematics question at the level of the final secondary class
- An interview with the selection panel.

All the questions in the competitive exam are obligatory and any candidate who does not answer or hand in a copy for one subject automatically fails.

9.3 Number of places in 1981: 120 including 10 to 20 foreign African students in accordance with the decision taken by the secretariat of State for Planning.

9.4 Subjects taught and number of hours

| FIRST YEAR | | SECOND YEAR | |
|---|---|---|---|
| Economic analyses | 240 h | Mathematics | 120 h |
| Mathematics | 120 h | Statistics | 120 h |
| Statistics | 120 h | History of underdevelopment | 60 h |
| Spatial analyses | 60 h | Theory of economic and | |
| Administrative and poli- | | International relations | 60 h |
| tical institutions | 60 h | Socialist political economy | 90 h |
| Economic and social | | National accounting | 60 h |
| history of Algeria | 60 h | Special analysis | 60 h |
| Management accounting | 60 h | Economic and financial institutions | 60 h |
| Demographic analyses | 60 h | History of economic thought | 60 h |

| THIRD YEAR | | |
|---|---|---|
| SUBJECTS COMMON TO THE TWO STREAMS (Analyses and Statistics) | STATISTICS STREAM | ECONOMIC ANALYSES STREAM |
| Theory of transition | Statistics | Planning of external relations |
| General and technical planning theory | Sampling | |
| | Data analysis | Manpower planning |
| Planning for the productive sector | | Development project evaluation |
| Linear programming and theory of graphs | | |
| Planning for units of production | | |
| Coherence of development plans | | |
| Organization of planning | | |
| Econometrics | | |
| Methodology | | |

| FOURTH YEAR | | |
|---|---|---|
| SUBJECTS COMMON TO THE TWO STREAMS (Analyses and Statistics) | STATISTICS | ECONOMIC ANALYSES |
| Regional planning | Computer sciences | Planning for social needs |
| Price planning | | |
| Demography | | Seminar on energy problems |

9.5 Instruction

(a) Teaching methods

The subjects at ITPEA are taught through lectures and supervised work.

Moreover, throughout the training lectures are regularly scheduled on topical matters.

Visits are often received from statisticians practicing in national and foreign institutions.

(b) Assessment procedure

Knowledge is evaluated by continuous assessment (written or oral tests, reading, exposes, files etc.).

At the end of each course, short tests are held. A panel meets at the end of each term.

A promotion panel meets at the end of each academic year. The average required to go up into a higher year is 10.

Students are allowed to repeat only once during the course.

10. Tuition fees

In 1977, the tuition fees were:

- 18,546 Algerian dinars per student per year for full fees or
- 5,269 Algerian dinars per student per year for partial fees covering only tuition (classes, practical work, lectures and documentation).

11. Fellowships

Algerian students who pass the competitive examination sign a ten year contract with the Ministry of Economic and Physical Planning and receive a partial salary during their studies.

12. Study and working conditions

Students who do not live in the administrative district of Algiers may board at the Institute, which has 250 places, at a cost of 150 Algerian dinars which is withheld from the students' salaries. Half board is possible for students living in the administrative district of EL DJAZAIR

Transport is provided for staff and students twice a day from the Institute to the most important areas of EL DJAZAIR

NUMBER OF REGISTRATIONS AND PASSES
FOR GRADUATES FROM 1977 TO 1980

| | | REGISTRATIONS (First year) | PASSES (Fourth year) |
|---|---|---|---|
| Fourth year | 1973/74 to 1976/77 | 117 Students | 79 Students |
| Fifth year | 1974/75 to 1977/78 | 107 Students | 90 Students |
| Sixth year | 1975/76 to 1978/79 | 118 Students | 61 Students |
| Seventh year | 1976/77 to 1979/1980 | 131 Students | 78 Students |